Meridian 1 and Succession Communication Server for Enterprise 1000

ISDN Basic Rate Interface

Administration

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About this document

This document applies to Meridian 1 Internet Enabled and Succession Communication Server for Enterprise (CSE) 1000 Release 1.1.

This document is a global document. Contact your system supplier or your Nortel Networks representative to verify that the hardware and software described is supported in your area.

When reading this document, please note the following:

- ISDN BRI trunking is not supported in North America.
- The Basic Rate Signaling Concentrator (BRSC) is not supported in Option 11C.
- The integrated Meridian 1 Packet Handler (MPH) is not supported on Option 11C.

ISDN BRI implementation

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Reference list

The following are the references in this section:

- *Networking Features and Services* (553-2901-301)

- *ISDN Basic Rate Interface: Product Description* (553-3901-100)
- *M5000TD-1 User Guide*
- *M5209TDcp Data Communications Guide*
- *M5317TDX Installation and Maintenance Guide*

Task summary list

The following is a summary of the tasks in this section:

1 LD 73 - Configure pad tables (optional)

2 LD 27 - Add or change an LAPD protocol group for a line

3 LD 27 - Remove an LAPD protocol group for a line

4 LD 27 - Print an LAPD protocol group

5 LD 27 - Add or change a MISP for a line

6 LD 27 - Remove a MISP configured for a line

7 LD 22 - Print a MISP configured for a line

8 LD 27 - Add or change a BRSC for a line

9 LD 27 - Remove a BRSC card configured for a line

10 LD 22 - Print a BRSC configured for a line

11 LD 27 - Add or change a SILC or UILC configured for a line

12 LD 27 - Remove a SILC or UILC

13 LD 27 - Print a SILC or UILC configured for a line

14 LD 27 - Add or change a DSL for a line

15 LD 27 - Remove a DSL configured for a line

16 LD 27 - Print a DSL configured for a line

17 LD 27 - Add or change a TSP for a line

18 LD 27 - Remove a TSP configured for a line

19 LD 27 - Print a TSP configured for a line

20 LD 27 - Add or change an LAPD protocol group

21 LD 27 - Remove an LAPD protocol group

22 LD 27 - Print an LAPD protocol group

23 LD17 - Add an ISDN PRI loop for an external packet handler

24 LD15 - Define an ISDN customer for an external packet handler

25 LD 16 - Configure a tie trunk route for packet data for an external packet handler

26 LD14 - Configure the tie trunk for packet data for an external packet handler

27 LD 27 - Add or change a MISP configured for an external packet handler

28 LD 27 - Remove a MISP configured for an external packet handler

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33 LD 27 - Add or change a SILC or UILC for an external packet handler

34 LD 27 - Remove a SILC or UILC configured for an external packet handler

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37 LD 27 - Remove a DSL configured for an external packet handler

38 LD 27 - Print a DSL configured for an external packet handler

39 LD 27 - Add or change a TSP for an external packet handler

40 LD 27 - Remove a TSP configured for an external packet handler

41 LD 27 - Print a TSP configured for an external packet handler

42 LD 27 - Add or change an LAPD protocol group

43 LD 27 - Remove an LAPD protocol group

44 LD 27 - Print an LAPD protocol group

45 LD 27 - Add or change an LAPB protocol group

46 LD 27 - Remove an LAPB protocol group

47 LD 27 - Print an LAPB protocol group

48 LD 27 - Add or change an X.25 protocol group

49 LD 27 - Remove an X.25 protocol group

50 LD 27 - Print an X.25 protocol group

51 LD 27 - Add or change a DNA table for an MPH

52 LD 27 - Remove a DNA table

53 LD 27 - Print a DNA table configured for an MPH

54 LD17 - Add an ISDN PRI loop for an external MPH

55 LD15 - Define an ISDN customer for an MPH

56 LD 16 - Configure a tie trunk route for packet data for an MPH

57 LD14 - Configure the tie trunk for packet data for an MPH

58 LD 16 - Configure a tie trunk route for an MCU to MPH interface

59 LD14 - Configure the Tie trunk for an MCU to MPH interface

60 LD 11 - Add or change an MCU to MPH interface

61 LD11 - Remove an MCU to MPH interface

62 LD 27 - Add or change a MISP configured for an MPH

63 LD 27 - Remove a MISP configured for an MPH

64 LD 22 - Print a MISP configured for an MPH

65 LD 27 - Add or change a BRSC configured for an MPH

66 LD 27 - Remove a BRSC configured for an MPH

67 LD 27 - Print a BRSC configured for an MPH

68 LD 27 - Add or change a SILC or UILC for an MPH

69 LD 27 - Remove a SILC or UILC configured for an MPH

70 LD 27 - Print a SILC or UILC configured for an MPH

71 LD 27 - Add or change a DSL for an MPH

72 LD 27 - Remove a DSL configured for an MPH

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74 LD 27 - Add or change a TSP for an MPH

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84 LD15 - Define a customer for a trunk

85 LD 73 - Configure pad tables (optional**)**

86 LD 27 - Add or change an LAPD protocol group for a trunk

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89 LD 16 - Configure ISDN BRI trunk route parameters

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96 LD 27 - Add or change a DSL for a trunk

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99 LD 73 - Configure a trunk clock reference source, for 1.5 Mb PRI/DTI

100 LD 73 - Configure trunk clock reference source, for 2.0 Mb PRI/DTI

Introduction

This chapter describes the procedures used for ISDN BRI line and packet data implementation, and ISDN BRI trunk access implementation. It lists the order in which these procedures should be performed and provides a detailed description of each procedure showing the prompts that are displayed and the responses to each prompt.

ISDN BRI line application is configured using Overlays 27 and 73 (optionally used for configuring a pad table). This includes any requirements needed to configure ISDN BRI sets for ISDN features which are non-BRI specific. For example, ISDN BRI sets are supported on the ISDN QSIG Call Diversion feature, so Overlay 27 will show those prompts that are required to configure ISDN BRI sets for this feature. The Terminal Service Profile (TSP) configuration is to be used.

The ISDN BRI Trunk Access capability is administered using Overlays 16, 27, and 73 (optionally used for configuring a pad table and setting clock referencing). This includes any requirements needed to configure ISDN BRI trunks for ISDN features which are non-BRI specific. For example, ISDN BRI trunks are supported on the ISDN QSIG Call Diversion feature, so Overlay 16 will show those prompts that are required to configure ISDN BRI trunks for this feature.

> ***Note:*** For information on how to configure ISDN BRI features on a Meridian 1, refer to *Networking Features and Services* (553-2901-301).

Configure ISDN BRI line application

Configuration order for line application

You must configure the following components in the order listed below to configure ISDN BRI lines.

Please note that when changing existing ISDN BRI service, following this order is unnecessary. Be aware, though, of the relationship of one component to another and whether changing one component necessitates changing other components.

1 Configure a pad table using LD 73 **(optional)**

This step is optional; if no pad values are configured the default values will be used.

Note: Pad table are used for lines only when the protocol to be used on a DSL is set to ETSI NET-3, INS NET 64, QSIG, or Numeris.

2 Configure a Link Access Procedure on the D-channel (LAPD) Group using LD 27.

3 Configure the MISP using LD 27.

4 Configure the BRSC using LD 27 **(optional)**.

5 Configure the SILC or UILC using LD 27.

This step is optional. The SILC or UILC can also be configured when configuring the DSL (see next step).

6 Configure the DSL using LD 27.

7 Configure the TSP using LD 27.

8 Program ISDN BRI terminals (M5317TDX, M5209TDcp)

End of Procedure

Configure pad tables (optional)

This step is optional; if no pad values are configured the default values will be used.

Note: Pad table are used for lines only when the protocol to be used on a DSL is set to ETSI NET-3, INS NET 64, QSIG, or Numeris.

The digital pad provides gain or attenuation values to condition the level of the digitized transmission signal according to the network loss plan. This determines transmission levels for the B-channel circuit-switched voice calls.

LD 73 - Configure pad tables (optional)

Prompt	Response	Comment
REQ	NEW	New settings
TYPE		Pad table type.
	BRIL	Enter BRIL
FEAT	PAD	Set the pad values used for ISDN BRIL
PDCA	1-16	Pad category table.
DFLT	(1)-16	PAD Category table. If one channel is using the specified table, then the command is aborted. Table 1 cannot be modified or deleted. The following prompts define the pad levels. The receiving pad code is ***r*** and the transmission pad code is ***t***. These entries have the range 0-26. The pad values (in decibels) relating to these codes are shown after this table.
ONP	r ... t	On-premises extension
DSET	r ... t	Meridian Digital Set
OPX	r ... t	Off-premises extension
DTT	r ... t	Digital TIE trunks
SDTT	r ... t	Digital Satellite TIE trunks

Prompt	Response	Comment
NTC	r ... t	Nontransmission compensated
TRC	r ... t	Transmission compensated
DCO	r ... t	Digital COT, FEX, WAT, and DID trunks
VNL	r ... t	VIA NET LOSS
DTO	r ... t	2Mb DTI digital TOLL office trunks
ACO	r ... t	Analog local exchange or WATS trunks
AFX	r ... t	Analog FEX trunks
ADD	r ... t	Analog DID trunks
SATT	r ... t	Analog satellite TIE trunks
ATO	r ... t	Analog TOLL office trunks
PRI2	r ... t	2Mb PRI trunk (prompted only if the 1.5/2Mb Gateway feature is equipped and TYPE=2Mb PRI)
XUT	r ... t	Analog local exchange trunk (prompted only if the 1.5/2Mb Gateway feature is equipped and TYPE=PRI2)
XEM	r ... t	Analog TIE trunk (prompted only if the 1.5/2Mb Gateway feature is equipped and TYPE=PRI2)
BRIL	r ... t	ISDN BRIL pad values. Valid inputs are 0-26. Refer to Table 1.

Table 1 shows ISDN BRI pad codes and their values. Positive dB represents loss and negative dB represents gain.

Table 1
ISDN BRI trunk pad codes and values

code	0	1	2	3	4	5	6	7
value (dB)	0.0	+1.0	+2.0	+3.0	+4.0	+5.0	+6.0	+7.0
code	8	9	10	11	12	13	14	15
value (dB)	+8.0	+9.0	+10.0	+11.0	+12.0	+13.0	+14.0	-1
code	16	17	18	19	20	21	22	23
value (dB)	-2	-3	-4	-5	-6	-7	-8	-9
code	24	25	26					
value (dB)	-10	idle	+0.6					

Configure an LAPD protocol group for line

Add a protocol group by using LD 27 and specifying its protocol group number. You may also change its LAPD parameters as needed or accept the default values. LAPD is a transmission protocol that specifies the transmission timers, the maximum number of retransmissions, the size of the data frame, and the number of negative acknowledgments allowed before the system issues an alarm.

LD 27 - Add or change an LAPD protocol group for a line

Prompt	Response	Comment
REQ	NEW	Add an ISDN protocol group

LD 27 - Add or change an LAPD protocol group for a line

TYPE	LAPD	LAPD Protocol group
PGPN	 0-15 <cr>	Protocol group number The values for this prompt are: 0-15=Adds a specified protocol group <cr>=Stops this prompt from being displayed again
LAPD	 YES NO	LAPD parameters —The values for this prompt are: YES=Define or modify the LAPD parameters NO=Does not prompt the LAPD parameters and assigns the default values shown in ( ) to these parameters.
T200	(2)-40	Retransmission timer specifies the time delay before the system retransmits the information. Delay is in increments of 0.5 seconds.
T203	4-(20)-80	Maximum time between transmission frames Delay is in increments of 0.5 seconds.
N200	1-(3)-8	Maximum number of retransmissions of unsuccessfully transmitted information.
N201	4-(260)	Maximum number of contiguous octets or bytes of information.
K	(1)-32	Maximum number of outstanding negative acknowledgment (NAKs) allowed before alarming the system.
N2X4	0-(10)-20	For 1TR6 connectivity — number of status inquiries when the remote station is in peer busy state.
PGPN	<cr>	Press <cr> to prevent repetition of all the parameters starting with LAPD.

Remove an LAPD protocol group for a line

You can remove an LAPD protocol group as long as it is not assigned to a DSL. If a protocol group is assigned to a DSL, delete the DSL before removing the protocol group.

LD 27 - Remove an LAPD protocol group for a line.

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	LAPD	Protocol group

LD 27 - Remove an LAPD protocol group for a line.

PGPN		Protocol group number
	0-15 ALL <cr>	0-15 = Removes a specified protocol group from 0-15 ALL = Removes all protocol groups <cr> = No change the protocol group is not removed. A protocol group cannot be removed if it is assigned to a DSL.
...	...	

Print an LAPD protocol group for a line

Configuration information for a specific LAPD protocol group or for all protocol groups can be printed.

LD 27 - Print an LAPD protocol group

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	LAPD	Protocol group
PGPN		Protocol group number
	0-15 <cr>	0-15 = Prints a specified protocol group from 0-15 <cr> = Prints all protocol groups and the number of DSLs in each group
USER	YES (NO)	YES = Print the LAPD group(s) selected in the PGPN prompt and the DSLs that are using it (them). NO = Do not print the LAPD user information.
REQ	...	

Configure a MISP for a line

The ISDN BRI line application or the Meridian 1 Packet Handler (MPH) application may be downloaded to the MISP hardware. If the hardware runs only the ISDN BRI line application, it functions as a stand-alone MISP. In this configuration, the MISP can support the signaling processing for four ISDN BRI line cards without association with a BRSC or it can support up to 120 ISDN BRI line cards with the maximum eight BRSCs.

The procedure which follows indicates how to add or change a MISP for line application. To add or change a MISP, specify its even loop number.

The MISP must be enabled by using the **ENLL l** command in Network and IPE Diagnostic Program LD 32.

LD 27 - Add or change a MISP for a line.

Prompt	Response	Comment
REQ	NEW CHG	Add or change an ISDN BRI MISP ***Note:*** The defaults apply to adding, not changing, a MISP.
TYPE	MISP	MISP
LOOP	0-158	MISP loop number; must be an even number, with the next odd loop number unequipped.
APPL	BRIL	BRIL = ISDN BRI line application
	XBRIL	XBRIL = Remove the ISDN BRI line application
	<cr>	<cr> = None. Enter BRIL for ISDN BRI line application. APPL is prompted until <cr> is entered.
DSPD	YES (NO)	YES = D-channel Packet Switched Data NO = No D-channel Packet Switched Data. Use the default value NO. Subsequent prompts will be skipped.

Remove a MISP configured for a line

Before removing the MISP which has been configured for a line:

- Remove all BRSCs associated with it, if applicable.
- Remove all DSLs connected to SILCs and UILCs associated with it.
- Disable the MISP loop with the **DISL l** command in LD 32.

LD 27 - Remove a MISP configured for a line.

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	MISP	Enter MISP to remove the MISP.

LD 27 - Remove a MISP configured for a line.

LOOP	0-158	Loop number of the MISP to be removed (must be an even number). The MISP must be disabled before being removed. All BSRCs, SILC and/or UILC DSLs associated with the MISP must be removed before removing the MISP. See “Remove a BRSC configured for a line” or “Remove a SILC or UILC configured for a line” in this chapter.
REQ		

Print a MISP configured for a line

Print the configuration information for a MISP which has been configured for a line by specifying its network loop number. If the MISP network loop number is not known, use LD 22 to print the system configuration.

LD 22 - Print a MISP configured for a line.

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	MISP	MISP ***Note:*** BRSC TNs associated with the MISP are also printed.
LOOP	0-158	Loop number (must be an even number).
REQ		

Configure a BRSC for a line

Note: The BRSC is not supported on Option 11C.

The Basic Rate Signaling Concentrator (BRSC) enhances the capacity of the ISDN BRI lines on the system by off-loading some of the signaling processing from the MISP to the BRSC. Each BRSC can support 120 DSLs. This increases DSL capacity for the MISP from 32 to 976.

Without a BRSC configured, a MISP can support up to four SILCs and UILCs in any combination. With a BRSC configured, a MISP can support the following maximum combinations:

- three line cards, one BRSC
- two line cards, eight BRSCs

The maximum number of DSLs that a MISP configured with a BRSC is 976. This figure is derived as follows:

- 1 MISP supports 8 BRSCs and 2 line cards (SILC/UILCs)
- 1 BRSC supports 15 SILC/UILC cards, each having 8 ports:
  - total (8*15) = 120
- 1 SILC/UILC card has 8 ports
  - total (8*120) = 960
- 2 SILC/UILC cards each having eight ports
  - total (8*2) = 16

Therefore, total number of DSLs = 960+16 = 976.

To configure a BRSC:

- Disable the MISP under the following conditions:
  - The first BRSC is configured.
  - You add the first BRSC to an IPE module with two or more configured ISDN BRI line cards. The MISP does not have to be disabled when adding BRSCs 2-8 to this configuration.
  - You change from a configuration with three line cards and two BRSCs to a configuration with two line cards and up to eight BRSCs.
- Disable all ISDN BRI line cards in an IPE Module
- Configure a BRSC in the IPE Module; specify its superloop number, shelf number, and card number. Since the BRSC will handle Dchannel Packet Switched Data (DPSD), specify the PRI loop and channel numbers for routing of the DPSD to an external packet handler.
- Select a MISP that can accommodate the BRSC
- Enable the MISP
- Enable the BRSC with the **ENLC lll s cc** command in LD 32

Table 2 lists the possible cases for adding or removing BRSCs with a Meridian 1 system already configured for ISDN BRI.

Table 2
Add or remove configured BRSCs

Initial configuration				
Configured line cards installed	**BRSCs**	**Action**	**Same IPE Module?**	**Disable MISP?**
0	0	Add BRSC 1	NA	Yes
0	1	Add BRSC 2-8	NA	No
1	0	Add BRSC 1	Yes/No	Yes
1	1	Add BRSC 2-8	NA	No
2	0	Add BRSC 1	Yes/No	Yes
2	1	Add BRSC 2-8	Yes/No	No
3	0	Add BRSC 1	Yes/No	Yes
3	0	Add BRSC 1	No	Yes
2	1	Add BRSC 2	Yes	Yes
0-2	2	Add BRSC 3-8	Yes/No	No
4	0	Add BRSC 1	Yes	Yes
3	1	Add BRSC 2	Yes	Yes
0-2	3-8	Add BRSC 3-8	Yes/No	No
2	2-8	Disable BRSC 1	N/A	No
2	1	Add line card 3	N/A	Yes
3	1	Delete BRSC	N/A	No
3	0	Add line card 4	N/A	Yes
2	2-8	Delete BRSCs	N/A	No
2	0	Add line card 3	N/A	Yes
3	0	Add line card 4	N/A	No

To add or change a BRSC for a line application, specify its superloop number, shelf number, and card number.

Enable the BRSC with the **ENLC lll s cc** command in LD 32.

LD 27 - Add or change a BRSC for a line.

Prompt	Response	Comment
REQ	NEW CHG	Add or change a SILC or UILC line card
TYPE	BRSC	SILC or UILC line card
BRSC	lll s cc	Card location The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
MISP	0-158	MISP loop number (must be an even number that has already been configured)
DPSD	YES (NO)	YES = D-channel Packet Switched Data NO = No D-channel Packet Switched Data Use the default value NO. All subsequent prompts are repressed.

Remove a BRSC configured for a line

Remove a BRSC which has been configured for a line by specifying its loop number. Before removing the BRSC, disable all line cards associated with it.

Before removing the BRSC, disable the BRSC loop with the **DISC lll s cc** command in LD 32; also, disable all line cards associated with the BRSC.

LD 27 - Remove a BRSC card configured for a line.

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	BRSC	Remove the BRSC data
BRSC	lll s cc	Card location The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15

LD 27 - Remove a BRSC card configured for a line.

REQ	...	

Print a BRSC configured for a line

Print the configuration information for a BRSC configured for a line by specifying its network loop number. If the BRSC network loop number is not known, use LD 22 to print the system configuration.

To print all BRSCs associated with a MISP, enter <cr> at the BRSC and MISP prompts.

LD 22 - Print a BRSC configured for a line.

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	BRSC	Print BRSC data
		Note: BRSC TNs associated with the MISP are also printed.
BRSC	lll s cc	Card location The values for this prompt are:
		lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
MISP	0-158 <cr>	MISP loop number (must be an even number that has already been configured).
		If <cr> is entered, all BRSCs configured in the system are printed; otherwise, all BRSCs associated with the MISP loop are printed.
REQ	...	

Configure a SILC or UILC for a line

Add or change a new SILC or UILC for ISDN BRI line application by specifying its location, card type, and the MISP network loop that this card uses to transmit and receive signaling and D-channel packet data.

> ***Note:*** This step may be skipped and the card type specified when configuring the DSL in the procedure “Add a DSL for a line.”

The following procedure is used when configuring the SILC or UILC cards without configuring their DSLs

Note: If there is a BRSC configured in the IPE module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc is displayed.

LD 27 - Add or change a SILC or UILC configured for a line.

Prompt	Response	Comment
REQ	NEW CHG	Add or change a SILC or UILC line card
TYPE	CARD	SILC or UILC line card
TN	lll s cc	Card location for Options 51C - 81C The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
	c	Card slot location for Option 11C The values for this prompt are 1-20
MISP	0-158	Loop number (must be an even number that has already been configured) for Options 51C - 81C ***Note:*** If there is a BRSC configured in the IPE module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc is displayed.
	1-9	MISP card slot number, for Option 11C
CTYP	SILC UILC	Card type to be added or changed. Remove any DSLs configured for this line card before changing the card type.
REQ	...	

Remove a SILC or UILC configured for a line

Remove a SILC or UILC which has been configured for a line by specifying its card location. Before removing the SILC or UILC, all configured DSLs must first be removed from the card by using the procedure “Remove a DSL configured for a line”. When the last DSL is removed, the card is automatically deleted.

When removing the card, the database information is also deleted from the data block. Use LD20 to list cards that have been removed.

LD 27 - Remove a SILC or UILC.

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	CARD	ISDN BRI line card
TN	lll s cc	Card location of the SILC or UILC to be removed for Options 51C - 81C. lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 Remove any DSLs that are configured for this card before removing the card.
	c	card location for Option 11C c = 1-20
...	...	

Print a SILC or UILC configured for a line

To print the configuration information for a SILC or UILC, specify its card location.

LD 27 - Print a SILC or UILC configured for a line

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	CARD	ISDN BRI line card
TN	lll s cc	Card location for Options 51C - 81C. lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15
	c	card location for Option 11C c = 1-20
...	...	

Configure a DSL for a line

To add or change a DSL for a line application, specify its port location and its DSL characteristics. DSL location specifies a SILC/UILC port connected to a DSL.

LD 27 - Add or change a DSL for a line (Part 1 of 4)

Prompt	Response	Comment
REQ	NEW CHG	Add or change a DSL
		Note: The defaults apply to adding, not changing, a DSL.
TYPE	DSL	DSL
DSL	lll s cc dsl#	DSL location for Options 51C - 81C.
		lll (superloop) = 0-156 (must be zero or a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
		Assign 31 DSLs for each MISP if DCH or BDCH were specified at the PH prompt in "MISP configuration procedures".
	c dsl#	DSL location for Option 11C the values for this prompt are: c (card) = 1-20 dsl# (DSL number) = 0-7
APPL	BRIL	ISDN BRI line application.
DES	x...x	Designator to assign to a DSL (ex. BUILD2) x...x = 1 to 6 alphanumeric DSL designator
CUST	0-99	Customer number
CTYP	SILC UILC	Card type.
		This prompt is displayed only if the SILC or UILC has not been previously configured using the "SILC or UILC configuration procedures," or "Add a DSL" procedure when configuring another DSL on the same SILC/UILC.

LD 27 - Add or change a DSL for a line (Part 2 of 4)

Prompt	Response	Comment
MISP	0-158	Loop number (must be an even number of a MISP that has already been configured) for Option 51C - 81C.
	1-9	MISP card slot number for Option 11C.
		This prompt is displayed only if the MISP has not been assigned to the specified SILC or UILC.
		If there is a BRSC configured in the IPE Module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc is displayed as shown in the following example:
		MISP 8 BRSC 24 0 15
MODE	NTAS NTFS	Network terminal line sampling mode (this prompt is displayed only if you specified the card type as SILC).
		The values for this prompt are:
		NTAS=Adaptive sampling Extended passive bus, Branched passive bus, Point-to-point bus, U interface DSL.
		NTFS=Fixed sampling Short passive bus.
B1CT	(VCE) (DTA)	B-channel 1 call type
	<cr>	VCE = circuit switched voice DTA = circuit switched data
		Enter <cr> to select voice and data as defaults.
B2CT	(VCE) (DTA)	B-channel 2 call type
	<cr>	VCE = Circuit switched voice DTA = Circuit switched data
		Enter <cr> to select voice and data as defaults.
LDN	0-3 (NO)	Departmental listed directory number
		0-3 = Departmental listed DN specified in LD15 NO = No departmental listed DN associated with the DSL
XLST	(0)-254	Pretranslation group (if configured in customer data block).
MTEI	1-(8)-20	Maximum number of Terminal Endpoint Identifiers, both static and dynamic combined assigned to the logical terminals on this DSL.

LD 27 - Add or change a DSL for a line (Part 3 of 4)

Prompt	Response	Comment
MCAL	2-(16)-32	Maximum number of calls on the DSL at one time. This includes calls waiting and on hold. Warning is received if less than 8 is specified.
MTSP	1-(8)-16	Maximum number of TSPs allowed for a DSL
PGPN	0-15	Protocol group number (no default value) The protocol group should be previously added as described in "Configure a protocol group for a line."
PRID	1- 6	Defines the protocol to be used on the DSL Selection of the protocol ID is terminal dependent.
		The values for this prompt are: 1=ANSI 2=ETSI 3=DMS 4=NET64 5=NUMERIS 6=NI-1
		Note: A response of 6 allows the ISDN BRI Conference feature to be configured in the TSP of the DSL.
PDCA	1-16	Pad category table, defined in LD 73. Prompted if PRID = 2 or 4.
FDN	n...n	Flexible CFNA directory number. Enter a 1-13 digit DN.
EFD	n...n	Flexible external call CFNA DN. Enter a 1-13 digit DN.
HUNT	n...n	Hunt directory number. Enter a 1-13 digit DN.
EHT	n...n	Hunt external call directory number. Enter a 1-13 digit DN.
TGAR	(0)-31	Trunk group access restriction
NCOS	(0)-99	Network class of service
SGRP	(0)-999	Scheduled Access Restriction Group Number.
CLS		Class of service access restrictions.
		More than one class of service can be entered by separating each entry with a space. Default features shown in parenthesis are selected by pressing <cr>.
	(ABDD) ABDA	Abandoned call record and time to answer denied Abandoned call record and time to answer allowed
	(ICDD) ICDA	Internal Call Detail Recording (Denied) Allowed

LD 27 - Add or change a DSL for a line (Part 4 of 4)

Prompt	Response	Comment
	(MRD) MRA	Message Restriction (Denied) Allowed
	(UDI) RDI	(Unrestricted) Restricted DID
	(UNR) (CTD) CUN FR1 FR2 FRE SRE TLD ICDA (ICDD) <cr>	(Unrestricted) Conditionally Toll Denied Conditionally Unrestricted Fully Restricted class 1 Fully Restricted class 2 Fully Restricted Semi-Restricted Toll Denied Internal Call Detail Recording allowed (Internal Call Detail Recording denied) Enter <cr> to select the defaults. More than one class of service may be selected by separating each entry with a space.
REQ	...	

Remove a DSL configured for a line

Remove a DSL configured for a line by specifying its location. To remove a DSL, first remove all the TSPs assigned to this DSL. When the last configured DSL on a card is removed, the card is removed automatically.

LD 27 - Remove a DSL configured for a line

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	DSL	DSL
DSL	lll s cc dsl#	DSL location for Options 51C - 81C. lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
	c dsl#	DSL location for Option 11C c (card) = 1-20 dsl# (DSL number) = 0-7
...	...	

Print a DSL configured for a line

Print the configuration information for a single DSL by specifying its location.

LD 27 - Print a DSL configured for a line

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	DSL	DSL
DSL	lll s cc dsl# lll s cc lll s lll	DSL information for Options 51C - 81C. lll s cc dsl# = Prints information for the specified dsl# lll s cc = Prints information for DSLs on the specified card lll s = Prints information for DSLs in the specified shelf lll = Prints information for DSLs on the specified loop
	c dsl#	DSL information for Option 11C.
DATE	(<cr>) x y z	Print data and display the last active date, where x = day (1-31), y = month (Jan-Dec), and z = year (1979-9999) specifies the starting date of the data to be displayed or printed.
PAGE	YES, (NO)	YES = prints one DSL per page NO = prints without paging
DES	x...x, <cr>	1-digit to 6-digit alphanumeric DSL designator No designator for DSLs
NACT	YES, (NO)	Activity date is updated to current date.
...	...	

Configure a TSP for a line

The TSP configuration procedures define the service profiles for ISDN BRI terminals connected to a DSL. A service profile specifies the type of transmission, the call restrictions, and the features the terminal can use.

To add or change a TSP to a DSL, specify the DSL location, its transmission characteristics, and the class of service for terminals connected to the DSL. If the default value is desired, press the ENTER key.

LD 27 - Add or change a TSP for a line (Part 1 of 5)

Prompt	Response	Comment
REQ	NEW CHG	Add or change a TSP

LD 27 - Add or change a TSP for a line (Part 2 of 5)

Prompt	Response	Comment
TYPE	TSP	Assign TSP to a DSL
DSL	lll s cc dsl#	DSL location for Options 51C - 81C. lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
	c dsl#	DSL location for Option 11C c (card) = 1-20 dsl# (DSL number) = 0-7
		The DSL must have been configured using the “DSL configuration procedures.”
USID	0-15	User service identifier
		0 is the TSP assigned to non-initializing terminals.
		The total number of TSPs defined for a DSL cannot exceed the maximum number of TSPs allowed for a DSL as specified by the MTSP prompt in the “DSL configuration procedures.”
		A TSP should be configured for non-initializing terminals. This is done by assigning USID=0 to the TSP.
MPHC	(YES) NO	Route D-channel packet switched data to the Meridian Packet Handler. Enter NO.
SPID	aaa...a <cr> Xaaa...a	Service profile ID aaa...a = any combination of 1-20 alphanumeric characters. <cr> = Stops this prompt from being displayed again. A maximum of 8 valid SPIDs per TSP are allowed. Xaaa...a removes the specified SPID.
		This prompt appears only if USID = 1-15. It repeats until <cr> is entered, but only up to 8 SPIDs may be entered. This SPID must be entered in the initializing terminal to associate the terminal with a USID.

LD 27 - Add or change a TSP for a line (Part 3 of 5)

Prompt	Response	Comment
FEATID	aaa mmm nnn <cr> Xaaa	ID associated with feature aaa, as follows: A03 = 3-party Conference A06 = 6-party conference mmm = Feature Activation ID(1-127) nnn = Feature Indication ID (1-127) (optional; if not entered, the value entered for mmm is assumed) <cr> = Skip the FEATID entry Xaaa = Delete the feature. Feature Activation ID and Feature Indication ID are feature key number assignments configured at the terminal level. Recommended terminal assignments are: - for the M5317TDX: A06 15 - for the M5209TDcp: A06 9
DN	xxxx (0)-N	xxxx = DN to be associated with the TSP. (0)-N = CLID entry, with N = CLID SIZE-1 (SIZE defined in LD 15). The DN cannot be shared by a non ISDN BRI terminal. This prompt is repeated until <cr> is pressed. At least one DN and a maximum of 8 DNs can be assigned to a DSL. The directory number can be associated with multiple TSP
...		
BCH	1-2	B-Channel (either 1 or 2) to which the TSP is associated.
...		
CT	VCE DTA	Directory number call type VCE=Circuit switched voice DTA=Circuit switched data One or more call types can be entered by separating each entry with a space. The call types entered must have been specified for the B1CT and B2CT prompts in “DSL configuration procedures.”
...		
SSRV_ETSI	VID7 XVID7	The ETSI ISDN BRI set supports the 7kHz/Videotelephony teleservices. Precede with an X to remove the configured 7kHz/Videotelephony teleservices.
...		

LD 27 - Add or change a TSP for a line (Part 4 of 5)

Prompt	Response	Comment
MCAL	1-(4)-8	Maximum number of calls per DN at one time Defines the maximum number of calls allowed for a directory number, which includes the total number of active calls, calls waiting, and calls on hold.
CLIP	(YES), NO	Calling line identification presentation service YES = displays of calling party DN on incoming calls NO = does not display of calling party DN on incoming calls
PRES	(YES), NO	Allows display of calling line identification to far end on outgoing calls. YES = present this DN to the called party on outgoing calls NO = do not present this DN to the called party on outgoing calls
COLP	(NO) YES	Connected Number Information Elements (IEs) is (not) passed from the Meridian 1 to the Terminal Adapter (S_0).
TRANS	(NO) YES	CLID and Connected Number Information Element (IE) are (not) passed from the Meridian 1 to the Terminal Adapter (S_0), if presentation is restricted.
FEAT		Class of service features
	HTA	HTA = Hunt allowed (always assign if terminal has CWT capability)
	(HTD)	HTD = Hunt denied
	FNA	FNA = Call forward no answer allowed
	(FND)	FND = Call forward no answer denied
	SFA	SFA = Second level call forward no answer allowed
	(SFD)	SFD = Second level call forward no answer denied
	CFTA	CFTA = Call forward by call type allowed
	(CFTD)	CFTD = Call forward by call type denied
	MWA	MWA = Message waiting allowed
	(MWD)	MWD = Message waiting denied
	FBA	FBA = Call forward busy allowed
	(FBD)	FBD = Call forward busy denied
	HBTA	HBTA = Hunting by call type allowed
	(HBTD)	HBTD = Hunting by call type denied

LD 27 - Add or change a TSP for a line (Part 5 of 5)

Prompt	Response	Comment
		DNO1/DNO2/(DNO3) = QSIG Call Diversion Notification for calling party where:
	DNO1	DNO1 = no notification
	DNO2	DNO2 = notification without forwarded-to (diverted) party's number and name
	(DNO3)	(DNO3) = notification with forwarded-to (diverted) party's number and name when available (default).
		DNDN/(DNDY) = QSIG Call Diversion Notification for forwarded-to (diverted) party where:
	DNDN	DNDN = no notification of called party's number and name notification
	(DNDY)	(DNDY) = notification with called party's number and name when available (default).
		More than one class of service can be entered by separating each entry with a space. Press <cr> to select multiple default features shown in parenthesis.
DFDN	n...n	Default directory number Enter a 1-digit to 7-digit DN. This DN must be defined at the preceding DN prompt A DN can be associated with multiple TSPs. Only one default DN can be defined for a TSP. This DN is sent in the outgoing setup if the terminal does not send a calling line identification number with the outgoing call.
REQ	...	

Remove a TSP configured for a line

Before removing a TSP configured for a line, disable the B-channel.

To remove a single TSP from a DSL, specify the DSL location and the user service identifier. Remove all TSPs from a DSL by entering **ALL** at the USID prompt.

Removal of the TSP disconnects all calls associated with the TSP's D-channel packet switched data and circuit switched voice data.

LD 27 - Remove a TSP configured for a line

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	TSP	TSP
		Note: Removal of the TSP disconnects all calls associated with the TSP's D-channel packet switched data and circuit switched voice data.
DSL	lll s cc dsl#	DSL location for Options 51C - 81C.
		lll (superloop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15 dsl# (DSL location)=0-7
	c dsl#	DSL location for Option 11C c (card) = 1-20 dsl# (DSL number)=0-7
USID	0-15 ALL	User service identifier
		0-15 = Removes a specified TSP from 0 to 15 ALL = Removes all TSPs for the specified DSL
REQ	...	

Print a TSP configured for a line

Configuration information can be printed for a TSP which has been configured for a line based on characteristics such as user service identifier, service profile ID, and directory number.

LD 27 - Print a TSP configured for a line

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	TSP	TSP

LD 27 - Print a TSP configured for a line

DSL	lll s cc dsl#	DSL location for Options 51C - 81C. lll (superloop) = 0-156 (even number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
	c dsl#	DSL location for Option 11C c (card) = 1-20 dsl# (DSL number)= 0-7
		The DSL must have been configured using the procedures described in "Configure a DSL for a line."
OPT	USID SPID SUID DN DNS NTN	USID = Prints the TSP with the specified user service ID SPID = Prints the TSPs with the specified service profile ID SUID = Prints the specified user profile ID and the User Service ID map DN = Prints the TSP(s) that contains the specified DN DNS = Prints all the directory numbers defined for the DSL NTN = Prints the TSPs that contain the specified NTN.
	<cr>	<cr> = Prints all the TSPs defined for the DSL
- USID	0-15	User service identifier
- SPID	aa..aa	Service profile ID Enter a 1-20 alphanumeric service profile ID.
- DN	xxxx (0)-N	xxxx = Directory number associated with the TSP (0)-N = CLID entry, N = SIZE-1 (SIZE defined in LD 15).
- NTN	nn..nn	National Terminal Number (1-10 digits)
REQ	...	

Initialize ISDN BRI terminals

After configuring the TSPs, initialize the ISDN BRI terminals by entering the required parameter values at the terminal key pad or keyboard. The user manual shipped with each terminal provides instructions for initializing the terminal for a specific application.

Information on configuring the M5317TDX and the M5209TDcp ISDN BRI terminals follows. Procedures are also given on how to configure NI-Conference on the M5317TDX and the M5209TDcp.

Set up ISDN BRI terminal parameters

The ISDN BRI terminal requires that Layer 2 and Layer 3 parameters be programmed at the terminal. Refer to your terminal documentation for complete instructions. In general, the following parameters are needed:

- TEI: Voice and circuit switched data calls require dynamic TEI assignment, which automatically assigns a TEI (range 64 - 126) when the terminal is connected to the DSL.

  Packet data requires static TEI assignment, which is performed manually by entering an unassigned TEI number (range 0 - 63) directly on the terminal. This TEI remains assigned to the terminal as long as it remains operational. Procedures for configuring terminals for voice and circuit switched data calls (dynamic TEI assignment), and for packet data (static TEI assignment) soon follow in this section.

- SPID: Enter the voice SPID, data SPID. Each SPID should match the one entered in LD 27 in the TSP which contains this terminal's DN. A different SPID can be configured for the voice and data, allowing two different TSPs to be configured in LD 27.

- DN: Enter voice DN and data DN. These DNs should match those defined in the associated TSPs.

- Some terminals may allow the user to make other selections such as Aμ law or bearer capability. Refer to the set menu for details.

Program the M5317TDX for line application

Procedure 1 provides the steps to program terminal parameters for the M5317TDX, firmware version 2.3a and later.

Procedure 1
Program the M5317TDX for a line

1 Unpack and plug in the terminal. Hold down the RLS and HOLD keys as it powers up.

2 Press MAINROM.

3 Press INSTALL.

4 Press ENGLISH or FRANCAIS for your choice of language.

5 Ensure that the terminal TEI is set to dynamic, by pressing the terminal softkey and entering * .

6 Press OK when you have finished setting the TEIs.

7 Enter the terminal (voice) SPID as configured in LD 27 (the default SPID does not apply). Press OK when finished.

8 Enter the data SPID as configured in LD 27 (the default SPID does not apply). Press OK when finished.

9 Enter the data DN. Press OK when finished.

10 Press HEADSET until REAR is displayed.

11 Press SIGTYPE until MER1 is displayed. If NI-Conference is desired, set SIGTYPE = NI.

12 Press A/MU until μ-Law is displayed.

13 Press MORE.

14 Ensure DIALPLAN is configured for NATIONAL.

15 Press EXIT.

16 Press NO for execute SPM (Service Profile Management).

17 Enter YES to enter new data fill, and YES to delete existing datafill.

18 Press KEY# then enter on the keypad the key number you wish to program.

19 Press EDIT DN then enter on the keypad the DN digits.

20 After each DN entry, press OK, then SAVE.

21 Repeat steps 17-19 for each voice DN desired. Press EXIT when finished.

22 To install NI-Conference on an M5317TDX terminal, press KEY#, then enter a number on the keypad (15 is recommended). Press TYPE until FA is displayed. Press FEATURE until FCC is displayed. Press SAVE.

Note: The KEY# must correspond to the Feature Activation ID entered for the terminal's TSP in LD 27.

23 If you made a mistake, press INSTALL again and begin at step 3; otherwise, press EXIT.

24 Wait a few minutes. Error code 23 displays and clears. DATE AND TIME flashes. Push setup. Set clock. Set date.

25 Make a voice call to ensure that the terminal is operational.

For more details, refer to the *M5317TDX Installation and Maintenance Guide*.

End of Procedure

The following features are supported on M5317TDX terminals:

- AutoDial Keys (up to 9 keys each with 20 digit numbers)
- Inspect Key
- Data Port Configuration from the menu
- Hands Free
- Conference-Soft Key (Recommended: Key #15)
- DiscData Soft key for Disconnecting Data Calls
- English/French Language Support
- Set based Ringing Patterns
- Set based Clock

Program the M5209TDcp for a voice call

Procedure 2 provides the steps to program terminal parameters for voice calls on the M5209TDcp, firmware version 2.28 and later.

Procedure 2
Program the M5209TDcp for voice call

1 Hold the Release and Hold keys simultaneously and wait for the menu screen. To advance to the next option, press ***** and to select an option, press #

2 MAIN MENU
CONFIG

— for TEI/SPID/DN/FEAT configuration, press #

3 ENTER PASSWORD

— enter a number for isdn (using keypad to spell out isdn# = 4736#)

4 CONFIGURATION MENU
TEI

— press # to select the TEI menu

5 ENTER TEI VOICE
AUTO

— press # to select AUTO (dynamic TEI assignment) for voice calls

6 ENTER TEI PSD
AUTO

— press # to select AUTO (dynamic TEI assignment) for packet switch data calls

7 ENTER TEI CSD
AUTO

— press # to select AUTO (dynamic TEI assignment) for circuit switch data calls

8 CONFIGURATION MENU
SPID

— press # to select the SPID menu

9 ENTER SPID VOICE
aaaa

— enter the SPID for voice call and press # to accept

10 ENTER SPID CSD
aaaa

— enter the SPID for circuit switch data call and press # to accept

11 CONFIGURATION MENU
SWITCH

— press # to select the SWITCH menu

12 SELECT SWITCH TYPE
NISDN

— press # to select National ISDN-1 type

13 CONFIGURATION MENU
EKTSmode

— press * to take the default call handling mode (BASIC) and advance to the next option

14 CONFIGURATION MENU
DEF KEYS

— press the first key from the bottom to define a primary DN appearance

15 DEFINE KEY
1 CALL APP nnnn

— enter the primary DN (key 1 can be a DN only)

— If you made a mistake and must re-enter the DN, press * to clear and enter the correct DN

— press # to accept

Note: Call appearance can use the same DN on multiple keys. For example, you may have one DN and two keys to invoke Conference.

16 CONFIGURATION MENU
DEF KEYS

— press key 2 to 9 to enter another DN appearance or a feature

17 DEFINE KEY
2 CALL APP nnnn

— enter a secondary DN appearance, OR

— press * to scroll through the feature options

— press # to accept

18 CONFIGURATION MENU
DEF KEYS

— press * to advance to the next option

19 CONFIGURATION MENU
CSD DN

— press # to select the circuit switch data DN menu

20 ENTER DN FOR CSD
nnnn

— enter the CSD DN

— press * to re-enter

— press # to accept

21 CONFIGURATION MENU
EXIT

— press # to exit

— press* to review/revise the above entries

22 MAIN MENU
EXIT

— press * to scroll through the main menu options until EXIT

23 SAVING DATA

— wait for screen to refresh

24 SELF TEST PASSED

— wait for self test to finish

End of Procedure

It is recommended that the following keys be configured on the M5209TDcp:

- Two DN call appearances at a minimum
- Speed Call List
- Stored Number Redial
- Disconnect Data Call
- Conference

Program NI-Conference on the M5209TDcp

Procedure 3 provides the steps to configure the M5209TDcp terminal for the NI-Conference feature.

Procedure 3
Configure NI-Conference on the M5209TDcp terminal

1 MAIN MENU
CONFIG

— for FEAT configuration, press #

2 ENTER PASSWORD

— enter isdn# (for example, 4736#)

3 CONFIGURATION MENU
TEI

— press * to scroll through the main menu until DEF KEYS

4 CONFIGURATION MENU
DEF KEYS

— press key 2 to 9 to configure a feature

5 DEFINE KEY
9 CONF

— to define Conference, press * to scroll through the feature options until CONF

— press # to accept

Note: NI-Conference can be defined on keys 2-9. The key number which is selected must also be entered as the Feature Activation ID of A03/A06 in the TSP configuration in LD 27. Also, at least two DN appearances must be configured on the terminal.

End of Procedure

Program the M5209TDcp for a data call

To configure a data call for the M5209TDcp terminal, use Procedure 4 to select circuit switched data (CSD) mode and to program CSD parameters.

Procedure 4
Configure a data call for the M5209TDcp terminal

Note: Ensure that the TEI and/or SPID is configured for Circuit Switched Data as described in the voice call configuration.

Follow steps 1-9 to select the Circuit Switched Data (CSD) mode on the M5209TDcp:

1 Press the Hold and Release keys simultaneously until the Main Menu appears on the set display.

MAIN MENU
CONFIG

2 Press * until the data option appears on the display.

MAIN MENU
DATA

3 Press # to display the current data mode.

DATA MENU
MODE

4 Press # to display the current data mode.

SELECT DATA MODE
PACKET

5 If PACKET, VCCI or NONE is displayed, press * until CIRCUIT is displayed. If CIRCUIT is displayed already, proceed to step 6.

SELECT DATA MODE
CIRCUIT

6 Press # to select circuit-switched mode.

DATA MENU
PARAMS

7 Press * to scroll through data options until EXIT appears on the display.

DATA MENU
EXIT

8 Press #

MAIN MENU
EXIT

9 Press #

Follow steps 10-20 to configure the CSD parameters on the M5209TDcp terminal:

Note: For information on CSD parameters, refer to the *M5209TDcp Data Communications Guide*.

10 Press the Hold and Release keys simultaneously until the Main Menu appears on the set display.

MAIN MENU
CONFIG

11 Press * until the data option appears on the display.

MAIN MENU
DATA

12 Press #.

DATA MENU
MODE

13 Press * until the PARAMS option is displayed.

DATA MENU
PARAM

14 Press # to select a parameter to change.

SELECT PARAMETER

15 Type the parameter number you wish to change and press #.

ENTER PARAMETER VALUE
202:3

This example, we typed 202. The display shows the current value for parameter 202 as 3(1200bps).

If you typed an invalid parameter, the display shows the INV PARM message. Retype a valid parameter number and press #.

16 Type the new value you wish to assign the parameter and press #. If you want to leave the parameter value unchanged, do not enter a value, just press #.

SELECT PARAMETER
ACCEPTED

The display shows the ACCEPTED message when you enter a valid value. If it displays INV VALUE, retype the value and press #.

17 Repeat steps 15 and 16 for other parameters. After the M5209TDcp has accepted the last parameter that you wish to change, press #.

DATA MENU
SAVE

18 To save the changed parameters in the M5209TDcp nonvolatile memory, press #. Otherwise, press * until the EXIT option is displayed.

DATA MENU
EXIT

19 Press #.

MAIN MENU
EXIT

20 Press # to finish programming CSD parameter.

End of Procedure

The Channel Control registers are used to select the CSD Data Bearer Capability. Hayes AT commands must be used to change the selection:

- AT%A4 = 0 sets it to unrestricted 64kbps
- AT%A4 = 1 sets it to 56kbps (adapted from 64kbps)

For more information on CSD mode, CSD parameters and a parameter summary, refer to the *M5209TDcp Data Communications Guide*.

The following features are supported on M5209TDcp terminals:

- Last Number Redial (invoked by ##)
- Set based Speed Call (Can store up to five 25 digit numbers)
- Store Number Redial (multiple keys)
- Conference (Key #9)
- DiscData Soft key for Disconnecting Data calls
- English/French Language Support
- Set based Ringing Patterns

Initialize a Nortel Network M5000TD-1 terminal adapter

The M5000TD-1 is Nortel Network's Universal Terminal Adapter (UTA). It adapts a non ISDN BRI data terminal or a 500/2500-type telephone to the ISDN BRI protocol. A terminal must be attached to the M5000 terminal adapter to initialize it.

Use the following procedures to initialize the M5000TD. For additional information, refer to the *M5000TD-1 User Guide*.

1 Circuit Switched Voice Calls

Service Profile ID (SPID) !C2 = “nnn”
Primary Directory Number (DN)!N3 = “nnn”
Second DN (optional) !N4 = “nnn”
B1 (B2) Channel!C4 (5) = 4
Configure DTE Channel as Voice %A0 = 3

2 Circuit Switched Data Calls

Service Profile ID (SPID) !C6 = “nnn”
Directory Number (DN)!N1 = “nnn”
B1 (B2) Channel!C4 (5) = 4
Configure DTE Channel as Data%A0 = 2
Configure Data Call as CSD%A1 = 0
Synchronous (Asynchronous)&Q1, 2 (&Q0)
Protocol Used% A2 = 0 (No protocol) synch
%A2 = 1 (T-Link - Reg S37) synch or asynch
%A2 = 2 (V.120) asynch
%A2 = 8 (I.515) asynch
Speed of channel%A4 = 0 (64kbps)
%A4 = 1 (56kbps)
Read-Only Error Register%A6

3 Packet Switched Data B-channel

Which B-channel 1 (2)!C4(5) = 1

!Y Registers specify B-channel packet layer parameters

default Packet Size - Receive !Y2 = 7 (Packet Size = 128 bytes)
!Y2 = 8 (Packet Size = 256 bytes)
Default Packet - Transmit!Y3 = 7 (Packet Size = 128 bytes)
!Y3 = 8 (Packet Size = 256 bytes)

X.25 Logical Channel Provisioning
(M5000TD-1 supports a maximum of 8 LCNs)

Number of PVCs on b-channel !Y4=n (default is 0)
Number of ILCs on B-channel!Y5=n (default is 8)
Number of OLCs on B-channel!Y7=n (default is 0)

Transmission Retry Count!B3=n (default is 4, range is 1-255)

Configure DTE Channel as data%A0 = 2
Configure Data Call as PSD%A1 = 1
Specify B1 or B2 Channel%A3 = 3 (B1)
%A3 = 5 (B2)

4 Packet Switched Data D-channel

X.25 packet service - D-channel !C3 = 1 (default)
Terminal Endpoint Identifier !D0 = n (n is TEI)

!X Registers specify D-channel packet layer parameters

Default Packet Size - Receive!X2 = 7 (Packet Size = 128 bytes)
!X2 = 8 (Packet size = 256 bytes)
Default Packet Size - Transmit!X3 = 7 (Packet Size = 128 bytes)
!X3 = 8 (Packet Size = 256 bytes)

X.25 Logical Channel Provisions
(M5000TD-1 supports a maximum of 8 LCNs)

Number of PVCs on D-channel!X4 = n (default is 0)
Number of ILCs on D-channel!X5 = n (default is 0)
Number of TLCs on D-channel!X6 = n (default is 8)
Number of OLCs on D-channel!X7 = n (default is 0)

Configure DTE Channel as Data%A0 = 2
Configure Data Call as PSD%A1 = 1
Specify D-channel%A3 = 9

Note 1: The operation of the Packet Assemble/Disassembler (PAD) of the M5000TD-1 is controlled by the %L registers. See the *M5000TD-1 User Guide* for details.

Note 2: After setting/changing the ! registers of the M5000TD-1, type AT%Z1 for the new settings to take effect.

Note 3: Type ATD<DN> to dial up another terminal.
Type ATA to answer.
Type +++ to get into command mode.
Type ATH to hang up (from command mode).
Type ATO to get back into online mode.

Note 4: The &K setting affects flow control on the M5000TD-1:

Value of 0 turns off flow control.
Value of 3 turns on XON/XOFF.
Value of 4 turns on TTS/CTS hardware flow control.

Note 5: The &Q setting affects asynch/synch mode of the M5000TD-1:

Value of 0 -> asynchronous.
Value of 1 -> asynch during call setup, synch thereafter.

Note 6: Typing at&v displays these settings:

Typing at&4 displays %L settings.
Typing &w0 saves active profile as profile 0.
Typing &y0 loads profile 0 on boot up.

Configure packet data

This section contains procedures for adding an external packet handler or the integrated internal packet handler (MPH).

Note: The MPH is not supported on Option 11C.

Add an external packet handler

The following procedures, in the presented order, should be followed when configuring an external packet handler. Please note, however, that when changing an existing ISDN BRI packet data configuration, following this order is unnecessary. Be aware, though, of the relationship of one component to another and whether changing one component necessitates changing other components.

1 Configure a Link Access Procedure on the D-channel (LAPD) Protocol Group (LD 27)

2 Configure packet data implementation:

- **a.** the ISDN PRI loop (LD17)
- **b.** the ISDN customer (LD15)
- **c.** the Tie trunk route for packet data (LD 16)
- **d.** the Tie trunk for packet data (LD14)

3 Configure the MISP (LD 27)

4 Configure the BRSC (LD 27) (optional)

5 Configure the SILC or UILC (LD 27)

Note: This step is optional. The SILC or UILC can also be configured when configuring the DSL (see next step)

6 Configure the DSL (LD 27)

7 Configure the TSP on the DSL (LD 27)

8 Initialize ISDN BRI terminals (M5317TDX, M5209TDcp)

———————— ***End of Procedure*** ————————

Configure an LAPD protocol group for an external packet handler

Add an LAPD protocol group by using LD 27 and specifying its protocol group number. You may also change its LAPD parameters as needed or accept the default values. LAPD is a transmission protocol that specifies the transmission timers, the maximum number of retransmissions, the size of the data frame, and the number of negative acknowledgments allowed before the system issues an alarm.

LD 27 - Add or change an LAPD protocol group

Prompt	Response	Comment
REQ	NEW CHG	Add or change an ISDN protocol group
TYPE	LAPD	LAPD Protocol group
PGPN	0-15 <cr>	Protocol group number The values for this prompt are: 0-15=Adds a specified protocol group <cr>=Stops this prompt from being displayed again
LAPD	YES (NO)	LAPD parameters. The values for this prompt are: YES = Define or modify the LAPD parameters (NO) = Does not prompt the LAPD parameters and assigns the default values shown in ( ) to these parameters.
T200	(2)-40	Retransmission timer specifies the time delay before the system retransmits the information. Delay is in increments of 0.5 seconds.
T203	4-(20)-80	Maximum time between transmission frames Delay is in increments of 0.5 seconds.
N200	1-(3)-8	Maximum number of retransmissions of unsuccessfully transmitted information.
N201	4-(260)	Maximum number of contiguous octets or bytes of information.
K	(1)-32	Maximum number of outstanding negative acknowledgment (NAKs) allowed before alarming the system.
N2X4	0-(10)-20	For 1TR6 connectivity — number of status inquiries when the remote station is in peer busy state.
PGPN	<cr>	Press <cr> to prevent repetition of all the parameters starting with LAPD.

Remove an LAPD protocol group configured for an external packet handler

You can remove an LAPD protocol group as long as it is not assigned to a DSL. If a protocol group is assigned to a DSL, delete the DSL before removing the protocol group.

LD 27 - Remove an LAPD protocol group

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	LAPD	Protocol group
PGPN		Protocol group number
	0-15 ALL <cr>	0-15 = Removes a specified protocol group from 0-15 ALL = Removes all protocol groups <cr> = No change the protocol group is not removed. A protocol group cannot be removed if it is assigned to a DSL.
...	...	

Print an LAPD protocol group configured for an external packet handler

Configuration information for a specific LAPD protocol group or for all protocol groups can be printed.

LD 27 - Print an LAPD protocol group

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	LAPD	Protocol group
PGPN		Protocol group number
	0-15 <cr>	0-15 = Prints a specified protocol group from 0-15 <cr> = Prints all protocol groups and the number of DSLs in each group
USER	YES (NO)	YES = Print the LAPD group(s) selected in the PGPN prompt and the DSLs that are using it (them) NO = Do not print the LAPD user information.
REQ	...	

Configure ISDN PRI trunk assignments for an external packet handler

Before configuring the MISP, DSL, and TSP with LD 27, an ISDN PRI loop, route, the following must be specified to provide a communication link with the packet handler.

- the ISDN PRI loop (LD17)
- the ISDN customer (LD15)
- the Tie trunk route for packet data (LD 16)
- the Tie trunk for packet data (LD14)

LD 17 - Add an ISDN PRI loop for an external packet handler

Prompt	Response	Comment
REQ	NEW CHG	NEW for new customer or CHG for an existing customer
TYPE	CFN	Configuration data block
...	...	
CEQU	YES	Change common equipment options
...	...	
DLOP	lll dd ff	PRI loop parameters for Options 51C - 81C lll (0-159) = Network loop number dd (0-24) = number of voice or data calls ff (ESF) = frame format: D2, D3, D4, Frame format must match the far end.
DLOP	1-9	1.5 Mbit PRI, for Option 11C
PR12	1-9	2.0 Mbit PRI, for Option 11C
MODE	PRI	Primary Rate Interface mode
...	...	
PRI	0-159	PRI loop number for Options 51C - 81C

LD 15 - Define an ISDN customer for an external packet handler

Prompt	Response	Comment
REQ:	CHG	CHG existing customer
TYPE:	NET	Networking Data.
CUST	0-99	Customer number for Options 51C - 81C
	0-31	Customer number for Option 11C
...	...	
ISDN	YES	YES = customer is equipped with ISDN (prompted only with D-channel defined in LD17)
...	...	

LD 16 - Configure a tie trunk route for packet data for an external packet handler

Prompt	Response	Comment
REQ	NEW	Add ISDN BRI protocol group settings
TYPE	RDB	Route data block

LD 16 - Configure a tie trunk route for packet data for an external packet handler

Prompt	Response	Comment
CUST	0-99 0-31	Customer number for Options 51C - 81C Customer number for Option 11C
ROUT	0-511	Route number
TKTP	TIE	Trunk route type
...	...	
DTRK	YES	Digital trunk route
BRIP	YES	Packet handler route ***Note:*** Prompted only if DTRK = YES.
ACOD	xxxxxx	Trunk route access code
TARG	<cr>	Access restriction group number
CNTL	<cr>	Changes to control timers
...	...	

LD 14 - Configure the tie trunk for packet data for an external packet handler

Prompt	Response	Comment
REQ	NEW	Enter new trunk data
TYPE	TIE	Trunk type
TN	lll ch	Loop, channel number for Options 51C - 81C
	c u	Card and unit, for Option 11C.
CUST	xx	Customer number
NCOS	<cr>	Network class of service group
RTMB	xx..xx	Route and route member
MNDN	<cr>	Manual directory number
TGAR	<cr>	Trunk group access restriction
CLS	<cr>	Class of service
...	...	

Configure a MISP for a external packet handler

To add or change a MISP configured for an external packet handler, specify its even loop number. Also, specify the ISDN PRI loop and channel numbers that will be used to transmit packet data to and from the packet handler.

The MISP must be enabled by using the **ENLL l** command in LD 32.

LD 27 - Add or change a MISP configured for an external packet handler (Part 1 of 2)

Prompt	Response	Comment
REQ	NEW CHG	Add or change an ISDN BRI MISP ***Note:*** The defaults apply to adding, not changing, a MISP.
TYPE	MISP	MISP.
LOOP	0-158	MISP loop number for Options 51C - 81C; must be an even number, with the next odd loop number unequipped.
	1-9	MISP card slot number, for Option 11C.

LD 27 - Add or change a MISP configured for an external packet handler (Part 2 of 2)

Prompt	Response	Comment
APPL	MPH	Application type for the MISP (MPH = packet handler).
DPSD	YES (NO)	YES = D-channel Packet Switched Data NO = No D-channel Packet Switched Data. Enter YES for packet switched data.
MPHC	(YES) NO	YES = DPSD are routed to a MPH NO = DPSD are routed to an external packet handler or PSDN. Enter NO to choose an external packet handler.
TN	lll ch	lll (0-159) = PRI loop number ch (1-23) = The PRI channel on which the B_D dedicated connection from the MISP is terminated.
REQ	...	

Remove a MISP configured for an external packet handler

Before removing a MISP:

- Remove all BRSCs associated with it.
- Remove all DSLs connected to SILCs and UILCs associated with it.
- Disable the MISP loop with the DISL l command in LD 32.
- Remove the PVC or network interface connections.

Remove a MISP by specifying its loop number.

LD 27 - Remove a MISP configured for an external packet handler

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	MISP	MISP
LOOP	0-158	Loop number for Options 51C- 81C. Must be an even number.
	1-9	MISP card slot number for Option 11C. The MISP must be disabled before removing it. All SILC and/or UILC DSLs associated with the MISP must be removed before removing the MISP.
REQ	...	

Print a MISP configured for an external packet handler

Print the configuration information for a MISP configured for an external packet handler by specifying its network loop number. If the MISP network loop number is not known, use LD 22 to print the system configuration. BRSC TNs which are associated with a MISP are also listed when data of this MISP are printed.

LD 22 - Print a MISP configured for an external packet handler

Prompt	Response	Comment
REQ:	PRT	Print an ISDN BRI component
TYPE	MISP	MISP BRSC TNs associated with a MISP are also listed when data of the MISP are printed.
LOOP	0-158	MISP loop number for Options 51C-81C. Must be an even number.
	1-9	MISP card slot number for Option 11C.
REQ	...	

Add or change a BRSC for an external packet handler

Note: The BRSC is not supported on Option 11C.

To add or change a BRSC for an external packet handler, specify its superloop number, shelf number, and card number. Specify the PRI loop and channel numbers for routing of the DPSD to an external packet handler.

When the BRSC has been added or changed, enable the MISP, enable the BRSC with the **ENLCIll s cc** command in LD 32, and enable all ISDN BRI line cards in the IPE module.

Note: Refer to the section "Add or remove BRSCs with a configured ISDN BRI system", which follows, for possible scenarios for adding or removing BRSCs with a Meridian 1 system configured for ISDN BRI.

LD 27 - Add or change a BRSC for an external packet handler

Prompt	Response	Comment
REQ	NEW CHG	Add or change a SILC or UILC line card
TYPE	BRSC	SILC or UILC line card
BRSC	lll s cc	Card location The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
MISP	0-158	MISP loop number (must be an even number that has already been configured)
DPSD	YES (NO)	Enter YES for D-channel Packet Switched Data
- MPHC	(YES) NO	Route D-channel packet switched data to the Meridian Packet Handler. Enter NO.
- PRI	lll nn	lll (1- 159) = PRI loop number that is connected to the external packet handler nn (1-23) = PRI channel number on which the dedicated connection from the BRSC is terminated Enter lll <space> nn on same line PRI CH appears only if DPSD = YES.

Remove a BRSC configured for an external packet handler

Remove a BRSC which has been configured for an external packet handler by specifying its loop number. Before removing the BRSC, disable all line cards associated with it, and disable the BRSC loop with the **DISC lll s cc** command in LD 32 before removing the BRSC.

> ***Note:*** Refer to the section "Add or remove BRSCs with a configured ISDN BRI system", which follows, for possible scenarios for adding or removing BRSCs with a Meridian 1 system configured for ISDN BRI.

LD 27 - Remove a BRSC configured for an external packet handler

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	BRSC	Remove the BRSC data
BRSC	lll s cc	Card location The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
REQ	...	

Add or remove BRSCs with a ISDN BRI system

To add or remove BRSCs with a Meridian 1 system configured for ISDN BRI, follow these steps:

- Disable the MISP when the first BRSC is configured.
- If two or more line cards which are served by the MISP are in the IPE Module where the first BRSC is added, disable the MISP once only.
- Disable the MISP when changing from a configuration with three line cards and two BRSC to a configuration with two line cards and up to eight BRSCs.
- Conversely, disable the MISP when changing from a configuration with two line cards and up to eight BRSCs to a configuration with three line cards and one BRSC.

The following table lists the possible scenarios for adding or removing BRSCs with a Meridian 1 system configured for ISDN BRI.

Add or remove BRSCs with a configured ISDN BRI system

Initial configuration			
Configured line cards installed	**BRSCs**	**Action**	**Same IPE Module?**
0	0	Add BRSC 1	NA
0	1	Add BRSC 2-8	NA
1	0	Add BRSC 1	Yes/No
1	1	Add BRSC 2-8	NA
2	0	Add BRSC 1	Yes/No
2	1	Add BRSC 2-8	Yes/No
3	0	Add BRSC 1	Yes/No
3	0	Add BRSC 1	No
2	1	Add BRSC 2	Yes
0-2	2	Add BRSC 3-8	Yes/No
4	0	Add BRSC 1	Yes
3	1	Add BRSC 2	Yes
0-2	3-8	Add BRSC 3-8	Yes/No
2	2-8	Disable BRSC 1	N/A
2	1	Add line card 3	N/A
3	1	Delete BRSC	N/A
3	0	Add line card 4	N/A
2	2-8	Delete BRSCs	N/A
2	0	Add line card 3	N/A
3	0	Add line card 4	N/A

Print a BRSC configured for an external packet handler

Print the configuration information for a BRSC which has been configured for an external packet handler by specifying its network loop number. If the BRSC network loop number is not known, use LD 22 to print the system configuration.

To print all BRSCs associated with a MISP, enter <cr> at the BRSC and MISP prompts.

LD 22 - Print a BRSC configured for an external packet handler

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	BRSC	Print BRSC data
		Note: BRSC TNs associated with the MISP are also printed.
BRSC	lll s cc	Card location The values for this prompt are:
		lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
MISP	0-158 <cr>	MISP loop number (must be an even number that has already been configured).
		If <cr> is entered, all BRSCs configured in the system are printed; otherwise, all BRSCs associated with the MISP loop are printed.
REQ	...	

Configure a SILC or UILC for an external packet handler

Add or change a new SILC or UILC to Meridian 1 by specifying its location, card type, and the MISP network loop that this card uses to transmit and receive signaling and D-channel packet data.

> ***Note:*** This step may be skipped and the card type specified when configuring the DSL in the procedure "Add a DSL for an external packet handler."

The following procedure is used when configuring the SILC or UILC cards **without** configuring their DSLs.

LD 27 - Add or change a SILC or UILC for an external packet handler

Prompt	Response	Comment
REQ	NEW CHG	Add or change a SILC or UILC line card
TYPE	CARD	SILC or UILC line card

LD 27 - Add or change a SILC or UILC for an external packet handler

TN	lll s cc	Card location for Options 51C - 81C. The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
	c	card location for Option 11C c = 1-20
MISP	0-158	Loop number (must be an even number that has already been configured) for Options 51C- 81C. If there is a BRSC configured in the IPE module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc is displayed.
	1-9	MISP card slot number for Option 11C.
CTYP	SILC UILC	Card type to be added or changed. Remove any DSLs configured for this line card before changing the card type.
REQ	...	

Remove a SILC or UILC configured for an external packet handler

Remove a SILC or UILC by specifying its card location. Before removing the SILC or UILC, all configured DSLs must first be removed from the card by using the procedure "Remove a DSL configured for an external packet handler". When the last DSL is removed, the card is automatically deleted.

When removing the card, the database information is also deleted from the data block. Use LD 20 to list cards that have been removed.

LD 27 - Remove a SILC or UILC configured for an external packet handler

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	CARD	ISDN BRI line card

LD 27 - Remove a SILC or UILC configured for an external packet handler

TN	lll s cc	Card location of SILC or UILC to be removed for Options 51C - 81C lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15
		Remove any DSLs that are configured for this card before removing the card
	c	Card slot location for Option 11C. c =1-20
...	...	

Print a SILC or UILC configured for an external packet handler

To print the configuration information for a SILC or UILC, specify its card location.

LD 27 - Print a SILC or UILC configured for an external packet handler

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	CARD	ISDN BRI line card
TN	lll s cc	Card location for Options 51C - 81C lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15
	c	Card location for Option 11C c = 1-20
...	...	

Configure a DSL for an external packet handler

To add or change a DSL, specify its port location and its DSL characteristics. DSL location specifies a SILC/UILC port connected to a DSL.

LD 22 - Add or change a DSL for an external packet handler (Part 1 of 6)

Prompt	Response	Comment
REQ	NEW CHG	Add or change a DSL ***Note:*** The defaults apply to adding, not changing, a DSL.
TYPE	DSL	DSL

LD 22 - Add or change a DSL for an external packet handler (Part 2 of 6)

Prompt	Response	Comment
DSL	lll s cc dsl#	DSL location for Options 51C - 81C. lll (superloop) = 0-156 (must be zero or a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
	c dsl#	DSL location for Option 11C c (card) = 1-20 dsl# (DSL number) = 0-7
		Assign 31 DSLs for each MISP if DCH or BDCH were specified at the PH prompt in "MISP configuration procedures."
DES	x...x	Designator to assign to a DSL (ex. BUILD2) x...x = 1 to 6 alphanumeric DSL designator
CUST	0-99	Customer number
CTYP	SILC, UILC	Card type.
		This prompt is displayed only if the SILC or UILC has not been previously configured.
OPT	(BRIL) <cr>	Defaults to ISDN BRI line application (BRIL).
		Enter <cr>
MISP	0-158	Loop number (must be an even number of a MISP that has already been configured).
		This prompt is displayed only if the MISP has not been assigned to the specified SILC or UILC.
MISP	0-158	Loop number (must be an even number of a MISP that has already been configured) for Options 51C - 81C.
	1-9	MISP card slot number for Option 11C
		This prompt is displayed only if the MISP has not been assigned to the specified SILC or UILC.
MODE	NTAS NTFS	Network terminal line sampling mode (this prompt is displayed only if you specified the card type as SILC).
		The values for this prompt are:
		NTAS=Adaptive sampling Extended passive bus, Branched passive bus, Point-to-point bus, U interface DSL.
		NTFS=Fixed sampling Short passive bus.

LD 22 - Add or change a DSL for an external packet handler (Part 3 of 6)

Prompt	Response	Comment
B1CT	(VCE) (DTA) PMD XPMD	B-channel 1 call type Enter PMD. PMD = B-channel packet data with dedicated connection from DSL to a PRI channel using external packet handler. For B1CT = PMD, B-channel packet data must have been specified at the PH prompt in LD 27. PMD cannot be combined with any other options. Do not select <cr> which defaults to VCE (circuit switched voice) and DTA (circuit switched data) which may not run concurrently with packet data. XPMD = Delete PMD call types.
TN	lll ch	lll (0-159) = PRI2 loop number which is connected to the external packet handler or the Packet Switched Data Network. ch (1-30) = the PRI2 channel on which the B_D-channel dedicated connection from the DSL B-channel is terminated. TN prompt is given only if call type = PMD. The PRI channel must be configured in LD17 and dedicated only to the connection of an external packet handler.
B2CT	(VCE) (DTA) PMD XPMD	B-channel 2 call type Enter PMD. PMD = B-channel packet data with dedicated connection from DSL to a PRI channel. (B-channel packet data must have been specified at the PH prompt in LD 27). PMD cannot be combined with any other options. Do not select <cr> which defaults to VCE (circuit switched voice) and DTA (circuit switched data) which may not run concurrently with packet data. For B2CT = PMD, B-channel packet data must have been specified at the PH prompt in LD 27. XPMD = Delete PMD call types
TN	lll ch	lll (0-159) = PRI2 loop number which is connected to the external packet handler or the PSDN. ch (1-30) = the PRI channel on which the B_D-channel dedicated connection from the DSL B-channel is terminated. TN prompt is given only if call type is set to PMD. The PRI channel must be configured in LD17 and dedicated only to the connection of an external packet handler..

LD 22 - Add or change a DSL for an external packet handler (Part 4 of 6)

Prompt	Response	Comment
LDN	0-3 (NO)	Departmental listed directory number 0-3 = Departmental listed DN specified in LD15 NO = No departmental listed DN associated with the DSL
XLST	(0)-254	Pretranslation group (if configured in customer data block)
MTEI	1-(8)-20	Maximum number of Terminal Endpoint Identifiers, both static and dynamic combined assigned to the logical terminals on this DSL
LTEI	n1 n2 mm <cr> Xmm	n1 = Logical Terminal Identifier (LTID) n2 = static Terminal Endpoint Identifier (TEI) mm (0-63) = MTEI, the maximum number of LTID and TEI n1 = 0 -15 and n2 = 0-1023 0 0 is invalid. 15 1023 is invalid. Logical Terminal Identifier (LTID) and static Terminal Endpoint Identifier (TEI) pair for D-channel packet data transmission. MTEI = the maximum number of these pairs. LTID = Logical Terminal Group (LTG) and Logical Terminal Number (LTN). LTG and LTN are entered as part of the DPN configuration. The TE I must match the one in the terminal. By entering all three here, the MISP is able to route data from the terminal to the DPN packet switch. Xmm = Deletes the LTID and TEI for the specified TEI. mm = 0-63 (must be unused static TEI). <cr> = Stops this prompt from being displayed again and skips to the next prompt LTEI is displayed only if:
MCAL	2-(16)-32	Maximum number of calls on the DSL at one time. This includes calls waiting and on hold. Warning is received if less than 8 is specified
MTSP	1-(8)-16	Maximum number of TSPs allowed for a DSL
PGPN	0-15	Protocol group number The protocol group should be previously added as described in “Configure an LAPD protocol group for an external packet handler” on page 55

LD 22 - Add or change a DSL for an external packet handler (Part 5 of 6)

Prompt	Response	Comment
PRID	1- 6	Defines the protocol to be used on the DSL Selection of the protocol ID is terminal dependent. The values for this prompt are: 1=ANSI 2=ETSI 3=DMS 4=NET64 5=NUMERIS 6=NI-1 ***Note:*** A response of 6 allows the ISDN BRI Conference feature to be configured in the TSP of the DSL.
FDN	n...n	Flexible CFNA directory number. Enter a 1-13 digit DN
EFD	n...n	Flexible external call CFNA DN. Enter a 1-13 digit DN.
HUNT	n...n	Hunt directory number. Enter a 1-13 digit DN.
EHT	n...n	Hunt external call directory number. Enter a 1-13 digit DN.
TGAR	(0)-31	Trunk group access restriction
NCOS	(0)-99	Network class of service
CLS		Class of service access restrictions. More than one class of service can be entered by separating each entry with a space. Default features shown in parenthesis are selected by pressing <cr>.
	(ICDD) ICDA	Internal Call Detail Recording (Denied) Allowed
	(MRD) MRA	Message Restriction (Denied) Allowed
	(UDI) RDI	(Unrestricted) Restricted DID

LD 22 - Add or change a DSL for an external packet handler (Part 6 of 6)

Prompt	Response	Comment
	(UNR) CTD CUN FR1 FR2 FRE SRE TLD ICDA (ICDD) <cr>	(Unrestricted) Conditionally Toll Denied Conditionally Unrestricted Fully Restricted class 1 Fully Restricted class 2 Fully Restricted Semi-Restricted Toll Denied Internal Call Detail Recording allowed (Internal Call Detail Recording denied) Enter <cr> to select the defaults. More than one class of service may be selected by separating each entry with a space.
REQ	...	

Remove a DSL configured for an external packet handler

Remove a DSL by specifying its location. To remove a DSL, first remove all the TSPs assigned to this DSL. When the last configured DSL on a card is removed, the card is removed automatically.

LD 27 - Remove a DSL configured for an external packet handler

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	DSL	DSL
DSL	lll s cc dsl#	DSL location for Options 51C - 81C lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
	c dsl#	DSL location for Option 11C c (card) = 1-20 dsl# (DSL number) = 0 -7
...	...	

Print a DSL configured for an external packet handler

Print the configuration information for a single DSL by specifying its location.

LD 27 - Print a DSL configured for an external packet handler

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	DSL	DSL
DSL	lll s cc dsl# lll s cc lll s lll	DSL information for Options 51C - 81C. lll s cc dsl# = Prints information for the specified dsl# lll s cc = Prints information for DSLs on the specified card lll s = Prints information for DSLs in the specified shelf lll = Prints information for DSLs on the specified loop
	c dsl#	DSL information for Option 11C.
DATE	(<cr>) x y z	Print data and display the last active date, where x = day (1-31), y = month (Jan-Dec), and z = year (1979-9999) specifies the starting date of the data to be displayed or printed.
PAGE	YES (NO)	YES = prints one DSL per page NO = prints without paging
DES	x...x <cr>	1-digit to 6-digit alphanumeric DSL designator No designator for DSLs
NACT	YES (NO)	Activity date is updated to current date.
...	...	

Configure a TSP for an external packet handler

To add or change a TSP to a DSL, specify the DSL location, its transmission characteristics, and the class of service for terminals connected to the DSL. If the default value is desired, press the ENTER key.

LD 27 - Add or change a TSP for an external packet handler

Prompt	Response	Comment
REQ	NEW CHG	Add or change a TSP
TYPE	TSP	Assign TSP to a DSL

Prompt	Response	Comment
DSL	lll s cc dsl#	DSL location for Options 51C - 81C lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
	c dsl#	DSL location for Option 11C. c (card) = 1-20 dsl# (DSL number) = 0 -7 The DSL must have been configured using the “DSL configuration procedures.”
USID	0-15	User service identifier Set USID = 0 to configure a default TSP for non-initializing terminals. Set USID = 1-15 for initializing terminals, for example, the M5317TDX. The total number of TSPs defined for a DSL cannot exceed the maximum number of TSPs allowed for a DSL as specified by the MTSP.
MPHC	(YES) NO	Route D-channel packet switched data to the Meridian Packet Handler. Enter NO.
SPID	aaa...a <cr> Xaaa...a	Service profile ID aaa...a = any combination of 1-20 alphanumeric characters. <cr> = Stops this prompt from being displayed again. A maximum of 8 valid SPIDs per TSP are allowed. Xaaa...a removes the specified SPID. This prompt appears only if USID = 1-15. It repeats until <cr> is entered, but only up to 8 SPIDs may be entered. This SPID must be entered in the initializing terminal to associate the terminal with a USID.

Prompt	Response	Comment
FEATID	aaa mmm nnn <cr> Xaaa	ID associated with feature aaa, as follows: A03 = 3-party Conference A06 = 6-party conference mmm = Feature Activation ID(1-127) nnn = Feature Indication ID (1-127) (optional; if not entered, the value entered for mmm is assumed) <cr> = Skip the FEATID entry Xaaa = Delete the feature. Feature Activation ID and Feature Indication ID are feature key number assignments configured at the terminal level. Recommended terminal assignments are: - for the M5317TDX: A06 15 - for the M5209TDcp: A06 9
DN	xxxx (0)-N	xxxx = DN to be associated with the TSP. (0)-N = CLID entry, with N = CLID SIZE-1 (SIZE defined in LD 15). The DN cannot be shared by a non ISDN BRI terminal. This prompt is repeated until <cr> is pressed. At least one DN and a maximum of 8 DNs can be assigned to a DSL. The directory number can be associated with multiple TSP
CT	VCE DTA	Directory number call type VCE=Circuit switched voice DTA=Circuit switched data One or more call types can be entered by separating each entry with a space. The call types entered must have been specified for the B1CT and B2CT prompts in “DSL configuration procedures.”
MCAL	1-(4)-8	Maximum number of calls per DN at one time Defines the maximum number of calls allowed for a directory number, which includes the total number of active calls, calls waiting, and calls on hold.
CLIP	(YES) NO	Calling line identification presentation service YES = displays of calling party DN on incoming calls NO = does not display of calling party DN on incoming calls

Prompt	Response	Comment
PRES	(YES) NO	Allows display of calling line identification to far end on outgoing calls. YES = present this DN to the called party on outgoing calls NO = do not present this DN to the called party on outgoing calls
COLP	(NO) YES	Connected Number Information Elements (IEs) is (not) passed from the Meridian 1 to the Terminal Adapter (S_0).
TRANS	(NO) YES	CLID and Connected Number Information Element (IE) are (not) passed from the Meridian 1 to the Terminal Adapter (S_0), if presentation is restricted.
FEAT		Class of service features
	HTA	HTA = Hunt allowed (always assign if terminal has CWT capability)
	(HTD)	HTD = Hunt denied
	FNA	FNA = Call forward no answer allowed
	(FND)	FND = Call forward no answer denied
	SFA	SFA = Second level call forward no answer allowed
	(SFD)	SFD = Second level call forward no answer denied
	CFTA	CFTA = Call forward by call type allowed
	(CFTD)	CFTD = Call forward by call type denied
	MWA	MWA = Message waiting allowed
	(MWD)	MWD = Message waiting denied
	FBA	FBA = Call forward busy allowed
	(FBD)	FBD = Call forward busy denied
	HBTA	HBTA = Hunting by call type allowed
	(HBTD)	HBTD = Hunting by call type denied

Prompt	Response	Comment
		DNO1/DNO2/(DNO3) = QSIG Call Diversion Notification for calling party where:
	DNO1 DNO2 (DNO3)	DNO1 = no notification DNO2 = notification without forwarded-to (diverted) party's number and name (DNO3) = notification with forwarded-to (diverted) party's number and name when available (default).
	DNDN (DNDY)	DNDN/(DNDY) = QSIG Call Diversion Notification for forwarded-to (diverted) party where: DNDN = no notification of called party's number and name notification (DNDY) = notification with called party's number and name when available (default).
		More than one class of service can be entered by separating each entry with a space. Press <cr> to select multiple default features shown in parenthesis.
DFDN	n...n	Default directory number Enter a 1-digit to 7-digit DN. This DN must be defined at the preceding DN prompt A DN can be associated with multiple TSPs. Only one default DN can be defined for a TSP. This DN is sent in the outgoing setup if the terminal does not send a calling line identification number with the outgoing call.
REQ	...	

Remove a TSP configured for an external packet handler

Before removing a TSP configured for an external packet handler, disable the B-channel.

To remove a single TSP from a DSL, specify the DSL location and the user service identifier. Remove all TSPs from a DSL by entering **ALL** at the USID prompt.

Removal of the TSP disconnects all calls associated with the TSP's D-channel packet switched data and circuit switched voice data.

LD 27 - Remove a TSP configured for an external packet handler

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	TSP	TSP ***Note:*** Removal of the TSP disconnects all calls associated with the TSP's D-channel packet switched data and circuit switched voice data.
DSL	lll s cc dsl#	DSL location for Options 51C - 81C lll (0-156) = superloop (must be an even number divisible by 4) (0 = invalid) s (0-1) = shelf cc (0-15) = card dsl# (0-7) = DSL location
	c dsl#	DSL location for Option 11C c (card) = 1-20 dsl# (DSL number) = 0-7
USID	0-15 ALL	User service identifier 0-15 = Removes a specified TSP from 0 to 15 ALL = Removes all TSPs for the specified DSL
REQ	...	

Print a TSP configured for an external packet handler

Configuration information can be printed for a TSP based on characteristics such as user service identifier, service profile ID, and directory number.

LD 27 - Print a TSP configured for an external packet handler

Prompt	Response	Comment
REQ	PRT	Print configuration data
TYPE	TSP	Print TSP data
DSL	lll s cc dsl#	DSL information for Options 51C - 81C
		lll (0-156) = superloop (even number divisible by 4, 0 = invalid) s (0-1) = shelf cc (0-15) = card dsl# (0-7) = DSL location
	c dsl#	DSL location for Option 11C c (card) = 1-20 dsl# (DSL number) = 0 -7
		The DSL must be already configured.
OPT	USID SPID SUID	USID = Prints the TSP with the specified user service ID SPID = Prints the TSPs with the specified service profile ID SUID = Prints the specified service profile ID and the user service id map
	DN DNS **NTN**	DN = Prints the TSP(s) that contains the specified DN DNS = Prints all the directory numbers defined for the DSL NTN = Prints the TSPs that contain the specified NTN.
		<cr> = Prints all the TSPs defined for the DSL
	<cr>	USID appears only when USID is the response.
USID	0-15	User service identifier
SPID	aa..aa	Service profile ID Enter a 1-20 digit alphanumeric service profile ID.
DN	nn..nn	Directory number associated with the TSP Enter a 1-digit to 7-digit directory number.
NTN	nn..nn	NTN value (1-10 digits)
REQ	...	

Initialize ISDN BRI terminals for an external packet handler

After configuring the TSPs, initialize the ISDN BRI terminals by entering the required parameter values at the terminal key pad or keyboard. The user manual shipped with each terminal provides instructions for initializing the terminal for a specific application.

Program the M5317TDX for an external packet handler

To access the Install Menu

1 Disconnect the line cord from the telephone for a few seconds, then reconnect.

2 Press and hold the Release key and the Hold key simultaneously until the display shows:

Select **ROM** to execute
BOOTROM MAINROM

3 Press the MAINROM softkey. After a few seconds, the display shows:

Select configuration menu
Install Network Lang Exit more...

Configuration for packet data

1 From the above display, press Network. The display shows:

SPID TEI SPM X.25DN more...

2 Press the TEI softkey. The display shows:

Phone Data X25 ok

Note: MPH requires static TEI assignment.

3 Press the X.25 softkey.

4 Enter your 2 digit TEI and press OK.

5 Press the X.25DN softkey.

6 Press Clear to clear out any existing data.

7 Enter your X.25 address and press OK.

8 Press the more... softkey.

9 Press the Exit softkey.

10 Press the Exit softkey again.

How to use your M5317TDX for packet data

1 You will be in the Main Menu after completing step 10 above. From the Main Menu, press the Setup softkey.

2 Press the Data softkey.

3 Select your Baud Rate, Character Size and Parity.

Note: You may use the defaults of 9600, 8 bits, no parity.

4 After setting these values, press the more... softkey.

5 Make sure the settings for DTR, CD HI, and RTS Hi are all set to YES. Press the more... softkey.

6 Press the Data softkey until the display shows X25.

7 Configure the packet and window sizes. The sizes should be selected to match the service data for the terminal.

Press the Pkt/Win softkey until the display shows No Neg. You may select No Neg if you wish to choose the default packet/window size of 128/2 (which is the MPH's default setting). This setting does not result in flow control parameter negotiation.

To select any other setting (such as 256/2), press the Pkt/Win softkey until the display shows the desired setting. This setting, and any other setting other than the default, results in the values being negotiated across the packet data interface, using flow control parameter negotiation.

For more details, refer to the *M5317TDX Installation and Maintenance Guide*.

Program the M5209TDcp for packet data

1 Press the Hold and Release keys simultaneously until the Main Menu appears on the set display.

MAIN MENU
CONFIG

2 Press #.

ENTER PASSWORD

3 Dial ISDN and press # to enter configuration mode.

CONFIGURATION MENU
TEI

4 Press #.

ENTER TEI VOICE
AUTO

5 Press #.

ENTER TEI PSD
XXX

6 Enter your TEI and press #.

Note: MPH requires static TEI assignment.

7 Press #.

CONFIGURATION MENU
SPID

8 Press * until EXIT appears on the display. Press #.

MAIN MENU
RING

9 Press * until DATA appears on the display. Press #.

DATA MENU
MODE

Note: The data mode may also be selected by using a Hayes command across the serial interface of the M5209cp.

10 Press #.

SELECT DATA MODE
PACKET

11 Press #.

DATA MENU
PARAMS

12 Press * until the profile you want to use appears on the display.

DATA MENU
SELECT 0

SELECT 0 selects PROF 90 profile.
SELECT 1 selects PROF 91 profile.
DEFAULT selects the factory default profile.

13 Press # to select the desired profile.

DATA MENU
EXIT

14 Press * until SAVE appears on the display.

DATA MENU
SAVE

15 Press # to save your changes.

16 Press #. Press # again.

End of Procedure

Add an MPH

Note: The MPH is not supported on Option 11C.

The following procedures, in the presented order, should be followed when configuring an MPH to a Meridian 1 with an existing ISDN BRI configuration. Please note, however, that when changing an existing ISDN BRI packet data configuration, following this order is unnecessary. Be aware, though, of the relationship of one component to another and whether changing one component necessitates changing other components.

1 Configure the Link Access Procedure on D-channel (LAPD) protocol group (LD 27).

2 Configure the Link Access Procedure - Balanced (LAPB) protocol group (LD 27).

3 Configure the X.25 packet protocol group (LD 27).

4 Configure the DNA table associated with the MPH network interface (LD 27).

5 Configure the ISDN Primary Rate Interface (PRI) for packet data as follows:

- **a.** the ISDN PRI loop (LD 17)
- **b.** the ISDN customer (LD 15)
- **c.** the tie trunk route for packet data (LD 16)
- **d.** the tie trunk for packet data (LD 14)

OR,

6 Configure the Meridian Communication Unit (MCU) for packet data as follows:

- **a.** the tie trunk route for packet data (LD 16)
- **b.** the tie trunk for packet data (LD 14)
- **c.** the Meridian Communication Unit (MCU) (LD 11)

7 Configure the MISP for MPH (LD 27)

8 Configure the BRSC for MPH (LD 27) **(optional)**

9 Configure the SILC/UILC for MPH **(optional** - The SILC or UILC can also be configured when configuring the DSL - see next step**)**

10 Configure the DSL for MPH (LD 27)

11 Configure the TSP for MPH (LD 27)

12 Configure Permanent Virtual Circuits (PVCs) (LD 27) **(optional)**

13 Configure MPH tandem connections (LD 14) **(optional)**

14 Modify CDR to reflect MPH calls (LD 15) **(optional**)

15 Initialize the ISDN BRI terminals for MPH (LD 27).

———————— ***End of Procedure*** ————————

Configure an LAPD protocol group for an MPH

Add an LAPD protocol group by using LD 27 and specifying its protocol group number. You may also change its LAPD parameters as needed or accept the default values. LAPD is a transmission protocol that specifies the transmission timers, the maximum number of retransmissions, the size of the data frame, and the number of negative acknowledgments allowed before the system issues an alarm.

LD 27 - Add or change an LAPD protocol group

Prompt	Response	Comment
REQ	NEW CHG	Add, change an ISDN protocol group
TYPE	LAPD	LAPD Protocol group
PGPN	0-15 <cr>	Protocol group number The values for this prompt are: 0-15=Adds a specified protocol group <cr>=Stops this prompt from being displayed again
LAPD	YES (NO)	LAPD parameters —The values for this prompt are: YES = Define or modify the LAPD parameters (NO) = Does not prompt the LAPD parameters and assigns the default values shown in ( ) to these parameters.
T200	(2)-40	Retransmission timer specifies the time delay before the system retransmits the information. Delay is in increments of 0.5 seconds.
T203	4-(20)-80	Maximum time between transmission frames Delay is in increments of 0.5 seconds.
N200	1-(3)-8	Maximum number of retransmissions of unsuccessfully transmitted information.
N201	4-(260)	Maximum number of contiguous octets or bytes of information.
K	(1)-32	Maximum number of outstanding negative acknowledgment (NAKs) allowed before alarming the system.
N2X4	0-(10)-20	For 1TR6 connectivity — number of status inquiries when the remote station is in peer busy state.
PGPN	<cr>	Press <cr> to prevent repetition of all the parameters starting with LAPD.

Remove an LAPD protocol group configured for an MPH

You can remove an LAPD protocol group as long as it is not assigned to a DSL. If a protocol group is assigned to a DSL, delete the DSL before removing the protocol group.

LD 27 - Remove an LAPD protocol group

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	LAPD	Protocol group
PGPN	0-15 ALL <cr>	Protocol group number 0-15 = Removes a specified protocol group from 0-15 ALL = Removes all protocol groups <cr> = No change the protocol group is not removed. A protocol group cannot be removed if it is assigned to a DSL.
...	...	

Print an LAPD protocol group configured for an MPH

Configuration information for a specific LAPD protocol group or for all protocol groups can be printed.

LD 27 - Print an LAPD protocol group

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	LAPD	Protocol group
PGPN	0-15 <cr>	Protocol group number 0-15 = Prints a specified protocol group from 0-15 <cr> = Prints all protocol groups and the number of DSLs in each group
USER	YES (NO)	YES = Print the LAPD group(s) selected in the PGPN prompt and the DSLs that are using it (them). NO = Do not print the LAPD user information.
REQ	...	

Configure an LAPB protocol group for an MPH

Add or change LAPB parameters for B-channel packet data or accept the default values. A set of timers and protocol values are associated with each group. Sixteen protocol parameter set groups can be defined per system. These groups are defined for use on the network and the user interface of MPH.

LD 27 - Add or change an LAPB protocol group (Part 1 of 2)

Prompt	Response	Comment
REQ	NEW CHG	Add or change configuration data set
TYPE	LAPB	To administer the LAPB protocol group. Package #248 for MPH must be activated.
PGPN	0-15 <cr>	LAPB protocol set group number. Enter <cr> for none. PGPN prompts for another protocol group until <cr> is entered.
LAPB	(NO) YES	NO = No change for the LAPB parameters YES = Change the LAPB parameters. Subsequent prompts are given only if LAPB = YES. If REQ = NEW and LAPB = NO, the default values for the timers which follow are assigned.
- T1	2-(6)-130	Response timer (in units of 0.5 seconds). Default is 3 seconds.
- T2	1-(4)-129	Maximum frames delay (in units of 0.5 seconds). Default is 2 seconds. ***Note:*** T2 must be less than T1.
- T3	0,3-(12)-131	Idle timer (in units of 0.5 seconds). Default is 2 seconds. ***Note:*** If T3 is not 0, then T3 must be greater than T1.
- N1	23-(135)-263	Maximum I-frame size (octets).
- N2	1-(10)-15	Maximum number of retries.
- K	1-(7)	Window size.

LD 27 - Add or change an LAPB protocol group (Part 2 of 2)

Prompt	Response	Comment
REQ	...	...

Remove an LAPB protocol group configured for an MPH

Note: Do not remove an LAPB protocol group if it is assigned to an MPH or a TSP.

LD 27 - Remove an LAPB protocol group

Prompt	Response	Comment
REQ	OUT	Remove an existing data set.
TYPE	LAPB	To remove an LAPB protocol group.
PGPN	0-15 ALL <cr>	LAPB protocol set group number to be removed. Enter ALL to remove all LAPB protocol groups that are not used. Enter <cr> to remove none. The LAPB protocol group to be deleted must not be referenced by an MPH network interface or a TSP.
...	...	

Print an LAPB protocol group for an MPH

You may print all or some of the LAPB protocol groups, by specifying the group number(s).

LD 27 - Print an LAPB protocol group

Prompt	Response	Comment
REQ	PRT	Print the configuration.
TYPE	LAPB	To print an LAPB protocol group set data.
PGPN	0-15 <cr>	LAPB protocol set group number to be printed. Enter <cr> to print all defined LAPB groups, in ascending order.
USER	YES (NO)	YES = Print the LAPB group(s) selected in the PGPN prompt and the TSPs for the MPH network interfaces that are using the group(s). NO = Do not print the LAPB group user information.

Configure an X.25 protocol group for an MPH

The X.25 protocol set group allows for the grouping of sets of timers and protocol values for X.25 packet protocols. Sixteen protocol parameter set groups may be defined per system.

LD 27 - Add or change an X.25 protocol group

Prompt	Response	Comment
REQ	NEW CHG	Add or change configuration data set.
		Note: If an X.25 group is changed, all of the active calls associated with the TSPs and MPH network interfaces using this group are dropped.
TYPE	X25P	To administer the X.25 protocol group.
		Package #248 for MPH must be activated.
PGPN	0-15 <cr>	X.25 protocol set group number.
		Enter <cr> for none.
		PGPN prompts for another protocol group until <cr> is entered.
X.25P	(NO) YES	NO = No change for the X.25 parameters YES = Change the X.25 parameters.
		Subsequent prompts are given only if X.25 = YES. If REQ = NEW and X.25 = NO, the default values for the timers which follow are assigned.
- T10/T20	15-(180)-930	Restart request timer (in seconds).
- T11/T21	15-(180)-930	Call request timer (in seconds).
- T12/T22	15-(180)-930	Reset request timer (in seconds).
- T13/T23	0,15-(180)-930	Clear request timer (in seconds).
		If T13/T23 = 0, it is turned off.
- PSIZ	16 32 64 (128) 256	Default transmit packet size (in octets).
- WSIZ	1-(2)-7	Default transmit window size (in octets).
REQ	...	

Remove an X.25 protocol group

Note: Do not remove an X.25 protocol group if it is assigned to an MPH or a TSP.

LD 27 - Remove an X.25 protocol group

Prompt	Response	Comment
REQ	OUT	Remove an existing data set.
TYPE	LAPB	To remove an X.25 protocol group. Do not remove an X.25 protocol group if it is assigned to an MPH or a TSP
PGPN	0-15 ALL <cr>	X.25 protocol set group number to be removed. Enter ALL to remove all X.25 protocol groups that are not used. Enter <cr> to remove none.
...	...	

Print an X.25 protocol group for MPH

You may print all or some of the X.25 protocol groups, by specifying the group number(s).

LD 27 - Print an X.25 protocol group

Prompt	Response	Comment
REQ	PRT	Print the configuration.
TYPE	X.25P	To print an X.25 protocol group set data.
PGPN	0-15 <cr>	X.25 protocol set group number to be printed. Enter <cr> to print all defined X.25 groups, in ascending order.
USER	YES (NO)	YES = Print the X.25 group(s) selected in the PGPN prompt and the TSPs for the MMPH network interfaces that are using the group(s). NO = Do not print the X.25 group user information.
...	...	

Configure a Data Network Address table for an MPH

The MPH supports the CCITT X.121 Numbering Plan, which consists of up to 14 digits to specify the Data Network Address (DNA) of a Data Terminal Equipment (DTE). The DNA consists of a four digit Data Network Identification Code (DNIC) and a one-10 digit National Terminal Number (NTN). The DNIC consists of a three digit Data Country Code (DCC) and a single Network Digit (ND).

In summary, the X.121 DNA is composed as follows:

DNA = DNIC (DCC+ND) + NTN

where

DNIC = zxxx (z can be 2-7; the digits 0 and 1 are reserved, and 8 and 9 are used for Telex; x can be 0-9)

NTN = 0000000001-9999999999 (1-10 digits)

Note: The DTA may be prefixed by a single digit (0-9), which, while transparent to the MPH, may have a local significance at the PSDN interface (typically used for international calls). This prefix may be entered in response to the PRFX prompt in LD 27, when configuring the MISP for the MPH.

The DNA numbers are administered using DNA tables, which are configured in LD 27. DNA tables contain the DNA numbers that are accessible to and by the PSDN. A DNA table number is assigned to each DNA table which is associated with a selected MPH network interface in the MISP configuration (there may be up to 32 DNA tables per MPH network). The DNA table number informs the network of available DNAs on that MPH network interface.

Note: The craftsperson typically collects the required information, for entry to LD 27, from the MPH network administrator.

LD 27 - Add or change a DNA table for an MPH

Prompt	Response	Comment
REQ	NEW CHG	Add or change configuration data set. ***Note:*** You cannot change the DNIC of the DNA table.
TYPE	DNAT	To administer the DNA tables. Package #248 for MPH must be activated.
DNAT	1-32	DNA table number. Note that there is no default value.
DNIC	nnnn	Enter the 4-digit DNIC for the DNAT table. DNIC = zxxx (z can be 2-7; the digits 0 and 1 are reserved, and 8 and 9 are used for Telex; x can be 0-9. ***Note:*** You cannot change the DNIC of the DNA table.

LD 27 - Add or change a DNA table for an MPH

NTN	nn...nn m...m n Xnn...nn Xm...m n <cr>	nn...nn = Add 1-10 digit National Terminal Number to the selected DNA table. m...m n = Enter a range of National Terminal Numbers to the selected DNA table. Enter the lowest NTN (m...m) in the table range (n, where n = 2-32). For example, entering 96765 20 adds to the DNA table an NTA number of 96765 with a table range of 96765 through 98764. ***Note:*** If REQ = NEW, leat 1 valid NTN must be entered for the table before using <cr> to exit the DNA table configuration. A maximum of 32 NTNs is allowed per DNA table. Enter Xnn to delete NTN nn from the table. Enter Xmn to delete a range mn NTNs from the table. <cr> = Do not add any NTN to the DNA table.
REQ	...	

Remove a DNA table configured for an MPH

Note: You cannot remove a DNA table if it is assigned to an MPH or a TSP, or referenced by an MPH network interface.

LD 27 - Remove a DNA table

Prompt	Response	Comment
REQ	OUT	Remove an existing data set.
TYPE	DNAT	To remove a DNA table.
DNAT	1-32	DNA table to be removed.
...	...	

Print a DNA table configured for an MPH

You may print all or some of the DNA tables which have been configured for an MPH, by specifying the DNA number(s).

LD 27 - Print a DNA table configured for an MPH

Prompt	Response	Comment
REQ	PRT	Print the configuration.

TYPE	DNAT	To print DNA table.
DNAT	1-32 <cr>	DNA table number to be printed. Enter <cr> to print all defined DNA tables, in ascending order.
USER	(NO) YES	NO = Do not print the DNA table user information. YES = Print the DNA tables selected in the DNAT prompt and the MMPH network interfaces that are using the DNA tables.
...	...	

Configure ISDN PRI trunk assignments for an MPH interface

The following trunk assignments must be configured for an MPH, when **not** using a Meridian Communications Unit (MCU).

- the ISDN PRI loop (LD 17)
- the ISDN customer (LD 15)
- the Tie trunk route for packet data (LD 16)
- the Tie trunk for packet data (LD 14)

LD 17 - Add an ISDN PRI loop for an external MPH

Prompt	**Response**	**Comment**
REQ	NEW CHG	NEW for new customer or CHG for an existing customer
TYPE	CFN	Configuration data block
...	...	
CEQU	YES	Change common equipment options
...	...	

Prompt	Response	Comment
DLOP	lll dd ff	PRI loop parameters lll (0-159) = Network loop number dd (0-24) = number of voice or data calls ff (ESF) = frame format: D2, D3, D4, Frame format must match the far end.
MODE	PRI	Primary Rate Interface mode
...	...	
PRI	0-159	PRI loop number

LD 15 - Define an ISDN customer for an MPH

Prompt	Response	Comment
REQ:	NEW CHG	NEW for new customer or CHG for existing customer
TYPE:	NET	Networking Data
CUST	xx	Customer number
...	...	
ISDN	YES	YES = customer is equipped with ISDN (prompted only with D-channel defined in LD17)
...	...	

LD 16 - Configure a tie trunk route for packet data for an MPH

Prompt	Response	Comment
REQ	NEW	Add ISDN BRI protocol group settings
TYPE	RDB	Route data block
CUST	xx	Customer number

Prompt	Response	Comment
ROUT	0-511	Route number
TKTP	TIE	Trunk route type
...	...	
DTRK	YES	Digital trunk route
BRIP	YES	Packet handler route ***Note:*** Prompted only if DTRK = YES.
ACOD	xxxxxx	Trunk route access code
TARG	<cr>	Access restriction group number
CNTL	<cr>	Changes to control timers
...	...	

LD 14 - Configure the tie trunk for packet data for an MPH

Prompt	Response	Comment
REQ	NEW	Enter new trunk data
TYPE	TIE	Trunk type
TN	lll ch	Loop, channel number
CUST	xx	Customer number
NCOS	<cr>	Network class of service group
RTMB	xx..xx	Route and route member
MNDN	<cr>	Manual directory number
TGAR	<cr>	Trunk group access restriction

Prompt	Response	Comment
CLS	<cr>	Class of service
...	...	

Configure a Meridian Communication Unit network interface for an MPH

Use LD 11 to configure an interface between the MCU and the MPH (the MPHI prompt determines if the MCU is to be configured as an MPH interface.)

Before the MCU interface can be configured, the Tie trunk route (using LD 16) and Tie trunk (using LD 14) must be first configured; the procedures follow.

LD 16 - Configure a tie trunk route for an MCU to MPH interface

Prompt	Response	Comment
REQ	NEW	Add ISDN BRI protocol group settings
TYPE	RDB	Route data block
CUST	xx	Customer number
ROUT	0-511	Route number
TKTP	TIE	Trunk route type
...	...	
DTRK	YES	Digital trunk route
BRIP	YES	Packet handler route ***Note:*** Prompted only if DTRK = YES.
ACOD	xxxxxx	Trunk route access code
TARG	<cr>	Access restriction group number
CNTL	<cr>	Changes to control timers
...	...	

LD 14 - Configure the Tie trunk for an MCU to MPH interface

Prompt	Response	Comment
REQ	NEW	Enter new trunk data
TYPE	TIE	Trunk type
TN	lll ch	Loop, channel number
CUST	xx	Customer number
NCOS	<cr>	Network class of service group
RTMB	xx..xx	Route and route member
MNDN	<cr>	Manual directory number
TGAR	<cr>	Trunk group access restriction
CLS	<cr>	Class of service
...	...	

LD 11 - Add or change an MCU to MPH interface

Prompt	Response	Comment
REQ	NEW CHG	Add or change configuration data set.
TYPE	MCU	To administer the MCU.
TN	lll s cc u	Loop, shelf, card and unit where MCU is located.
CDEN	sd dd 4d	Single, double, or quadruple density. ***Note:*** Not prompted for superloops.
CUST	xx	Customer number.
MPHI	YES (NO)	Enter YES, for the MCU to be used with the MPH network interface. All subsequent prompts, except OPE, are skipped. Consequently, only the OPE and related prompts can be changed. NO = Do not use the MCU as the MPH network interface.

LD 11 - Add or change an MCU to MPH interface

... REQ	...	...

Remove an MCU to MPH network interface

You may remove an MCU to MPH interface by specifying the loop, shelf, card and unit where it is located.

LD 11 - Remove an MCU to MPH interface

Prompt	Response	Comment
REQ	OUT	Remove an existing data set.
TYPE	MCU	To remove the MCU interface.
TN	lll s cc u	Loop, shelf, card and unit where MCU is located.
REQ	...	

Configure a MISP for an MPH

An MPH may be downloaded to the MISP hardware. If the hardware platform runs only the MPH application, the MISP card serves as a dedicated MPH performing basic packet handling functions for the Meridian 1 system. This configuration is done by using the procedure which follows.

The MISP must be enabled by using the **ENLL l** command in Network and IPE Diagnostic Program LD 32.

LD 27 - Add or change a MISP configured for an MPH (Part 1 of 5)

Prompt	Response	Comment
REQ	NEW CHG	Add or change a new data set
TYPE	MISP	Administers the MISP card
LOOP	0-158	MISP loop number The MISP loop number must be an even number and the next odd loop number must be unequipped.

LD 27 - Add or change a MISP configured for an MPH (Part 2 of 5)

Prompt	Response	Comment
APPL	MPH <cr> XMPH	Enter MPH. <cr> = BRIL application BRIL and MPH may NOT be configured on the same MISP. XMPH = Remove the MPH application The MPH application may be removed only if there are: — no D-channel packet data separators and — no B-channel or D-channel terminals and — no network interfaces and — no PVC connections
PRFX	0-9 NO	Prefix to be used by the DNA tables of the MPH. NO = No prefix is selected. If the PSDN with which the MPH is interfacing uses a prefix, enter the prefix digit here.
NTNO	(YES) NO	YES = PSDN presents only the NTN in the called address field of incoming call packets. NO = PSDN presents both DNIC and NTN in the called address field of incoming call packets. Before changing the response to PRFX, NTNO, and DNIC, disable the MPH application.
DNIC	xxxx	Enter a 4-digit DNIC for the DNAs used with the MPH. Each MPH can support DNAs of only one DNIC. The DNIC may be changed only when the MPH has removed its association with any DNA table and TSP.
NWIF	n Xn <cr>	Enter the MPH network interface identifier for configuration (n = 1-3.) Xn = Remove the MPH network interface, n <cr> = none, completes the MISP configuration. Before changing the parameters TN, PVC, IC, TC, and OC, disable the associated network interface with the DSIF command in LD 32.

LD 27 - Add or change a MISP configured for an MPH (Part 3 of 5)

Prompt	Response	Comment
- TN	l s c u lll ch	Loop, shelf, card, unit of the MCU where the dedicated connection from the MPH is terminated. lll = PRI loop number which is connected to the MPH ch = the PRI channel on which the dedicated connection from the MPH is terminated. Enter the TN of either the MCU or the PRI channel on which the dedicated connection from the MPH is terminated. The PRI loop must have been configured in LD 17 and it must be dedicated for the MPH or PSDN. The PRI channel must be configured for ISDN BRI packet data route in LD 16 and LD 14. The MCU must have been configured in LD 11. The associated network interface must be disabled prior to changing the PRI loop and channel number to a different value. If the PRI channel or the MCU has been chosen to serve as a network interface for an MPH, it can be selected to serve as a network interface for another MPH or as another network interface for the same MPH. If the channel is not free, the TN prompts for another PRI loop number and channel number or the same loop number with a free channel number.
- RATE	56 (64)	The PSDN communicates at either 56K or 64K across the PRI channel network interface. This prompt appears only if the input TN is on a PRI loop.
- LAPB	0-15	The LAPB protocol set group number to be used on the MPH network interface.
- X25P	0-15	The X.25 packet protocol set group number to be used on the MPH network interface.

LD 27 - Add or change a MISP configured for an MPH (Part 4 of 5)

Prompt	Response	Comment
- PVC	n1 n2	The range of Permanent Virtual Circuit Logical Channel Numbers. n1 = lowest PVC LCN (1-4095) n2 = highest PVC LCN (1-4095)
	<cr>	<cr> = none
		The Logical Channel Numbers values must follow this format: PVC must be less than IC which must be less than TC which must be less than OC.
		LCNs cannot be shared by PVC, IC, TC, or OC.
		Not all LCNs must be used.
- IC	n1 n2	The range o Incoming Logical Channel Numbers n1 = lowest Incoming LCN (1-4095) n2 = highest Incoming LCN (1-4095)
	<cr>	<cr> = none
- TC		The range of Two-way Logical Channel Numbers.
	n1	n1 = lowest Two-way LCN (1-4095).
	n2	n2 = highest two-way LCN (1-4095).
	<cr>	<cr> = none
- OC		The range of Outgoing Logical Channel Numbers.
	n1	n1 = lowest Outgoing LCN (1-4095).
	n2	n2 = highest Outgoing LCN (1-4095)
	<cr>	<cr> = none
- DNAT		Associate the DNA table with the MPH network interface.
	nn	nn = 1-32
	Xnn	Xnn = Remove DNA table from the MPH network interface.
	<cr>	<cr> = none
		Because only one DNIC can be used in an MPH, the DNA table number must have the same DNIC number as the MPH.
		To change a DNA table number, remove the old table number and then add the new.
		The table number to be removed must be associated with the MPH network interface.
		Each MPH network interface can be associated with a maximum of four DNA tables.

LD 27 - Add or change a MISP configured for an MPH (Part 5 of 5)

Prompt	Response	Comment
...		

Remove a MISP configured for an MPH

Before removing a MISP which has been configured for an MPH:

- Remove all BRSCs associated with it.
- Remove all DSLs connected to SILCs and UILCs associated with it.
- Disable the MISP loop with the **DISL l** command in LD 32.
- Remove the PVC or network interface connections.

Remove an MISP by specifying its loop number.

LD 27 - Remove a MISP configured for an MPH

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	MISP	MISP
LOOP	0-158	Loop number Must be an even number. The MISP must be disabled before removing it. All SILC and/or UILC DSLs associated with the MISP must be removed before removing the MISP.
REQ	...	

Print a MISP configured for an MPH

Print the configuration information for a MISP which has been configured for an MPH by specifying its network loop number. If the MISP network loop number is not known, use LD 22 to print the system configuration. BRSC TNs which are associated with the MISP are also listed when data of this MISP are printed.

LD 22 - Print a MISP configured for an MPH

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	MISP	MISP BRSC TNs associated with a MISP are also listed when data of the MISP are printed.
LOOP	0-158	MISP loop number Must be an even number.
REQ	...	

Configure a BRSC for an MPH

To configure a BRSC for an MPH, follow these steps:

1 Disable the MISP to configure the first BRSC.

2 Disable all ISDN BRI line cards in an IPE Module.

3 Configure a BRSC in the IPE Module and select a MISP that can accommodate the BRSC.

4 Set up the connection to the internal packet handler, the Meridian 1 Packet Handler (MPH).

5 Enable the MISP.

6 Enable the BRSC with the **ENLCIll s cc** command in LD 32.

7 Enable all ISDN line cards in the IPE Module.

To add or change a BRSC, specify its superloop number, shelf number, and card number, and specify the MISP loop for routing of the DPSD to the MPH.

Note: Refer to the section "Add or remove BRSCs with a configured ISDN BRI system", which follows, for possible scenarios for adding or removing BRSCs with a Meridian 1 system configured for ISDN BRI.

LD 27 - Add or change a BRSC configured for an MPH

Prompt	Response	Comment
REQ	NEW CHG	Add or change BRSC
TYPE	BRSC	BRSC
BRSC	lll s cc	Card location
		The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
MISP	0-158	MISP loop number (must be an even number that has already been configured)
DPSD	YES (NO)	Enter YES for D-channel Packet Switched Data NO = No D-channel Packet Switched Data
MPHC	(YES) NO	Enter YES or <cr> for DPSD to be routed to an MPH card. NO = DPSD are routed to an external packet handler.
MPH	0-158	MISP loop number for MPH application The MISP with MPH application where D-channel packet data are being sent. This prompt appears only if DPSD = YES and MPHC = YES. No more prompts of the current transaction appear for the MPH application.

Remove a BRSC configured for an MPH

In order to remove a BRSC which has been configured for an MPH:

- Disable all the line cards.
- Remove a BRSC by specifying its superloop number, shelf number, and card number.
- Disable the BRSC with the **DISC lll s cc** command in LD 32

Note: After the BRSC is removed, the line cards must be associated with the MISP again.

LD 27 - Remove a BRSC configured for an MPH

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	BRSC	Remove the BRSC data
BRSC	lll s cc	Card location The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15 BRSC can be removed only if the line cards are disabled and the BRSC is disabled. ***Note:*** After the BRSC is removed, the ISDN BRI line cards must be associated with the MISP again
REQ	...	

Print a BRSC configured for an MPH

Use LD 27 to print the following information for a BRSC which has been configured for an MPH:

- to print a BRSC, specify its superloop and shelf (card number is optional)
- to print a BRSC serving the superloop, specify its superloop number
- to print all BRSCs associated with a MISP, enter <cr> at BRSC prompt and specify the MISP loop number
- to print all BRSCs associated with a system, enter <cr> at both BRSC and MISP prompts.

LD 27 - Print a BRSC configured for an MPH

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	BRSC	Print BRSC data ***Note:*** BRSC TNs associated with the MISP are also printed.

LD 27 - Print a BRSC configured for an MPH

BRSC	lll s c lll s lll <cr>	Card location The values for this prompt are: lll (0-156) = superloop number s (0-1) = shelf number cc (0-15) = card number If input is: - lll s or lll s cc, data of the corresponding BRSC is printed. - lll, data of the BRSCs serving the superloop is printed. If <cr> is entered, the next prompt, MISP appears.
MISP	0-158 <cr>	MISP loop number (must be an even number that has already been configured). If <cr> is entered, all BRSCs configured in the system are printed; otherwise, all BRSCs associated with the MISP loop are printed.
REQ	...	

Add or remove BRSCs with a ISDN BRI system

To add or remove BRSCs with a Meridian 1 system configured for ISDN BRI, follow these steps:

- Disable the MISP when the first BRSC is configured.
- If two or more line cards which are served by the MISP are in the IPE Module where the first BRSC is added, disable the MISP once only.
- Disable the MISP when changing from a configuration with three line cards and two BRSC to a configuration with two line cards and up to eight BRSCs.
- Conversely, disable the MISP when changing from a configuration with two line cards and up to eight BRSCs to a configuration with three line cards and one BRSC.

The following table lists the possible scenarios for adding or removing BRSCs with a Meridian 1 system configured for ISDN BRI.

Table 3
Add or remove BRSCs with a configured ISDN BRI system

Initial configuration			
Configured line cards installed	**BRSCs**	**Action**	**Same IPE Module?**
0	0	Add BRSC 1	NA
0	1	Add BRSC 2-8	NA
1	0	Add BRSC 1	Yes/No
1	1	Add BRSC 2-8	NA
2	0	Add BRSC 1	Yes/No
2	1	Add BRSC 2-8	Yes/No
3	0	Add BRSC 1	Yes/No
3	0	Add BRSC 1	No
2	1	Add BRSC 2	Yes
0-2	2	Add BRSC 3-8	Yes/No
4	0	Add BRSC 1	Yes
3	1	Add BRSC 2	Yes
0-2	3-8	Add BRSC 3-8	Yes/No
2	2-8	Disable BRSC 1	N/A
2	1	Add line card 3	N/A
3	1	Delete BRSC	N/A
3	0	Add line card 4	N/A
2	2-8	Delete BRSCs	N/A
2	0	Add line card 3	N/A
3	0	Add line card 4	N/A

Configure a SILC or UILC for an MPH

Add or change a new SILC or UILC for an MPH network interface by specifying its location, card type, and the MISP network loop that this card uses to transmit and receive signaling and D-channel packet data.

Note: This step may be skipped and the card type specified when configuring the DSL in the procedure "Add a DSL."

The following procedure is used when configuring the SILC or UILC cards **without** configuring their DSLs.

LD 27 - Add or change a SILC or UILC for an MPH

Prompt	Response	Comment
REQ	NEW CHG	Add or change a SILC or UILC line card
TYPE	CARD	SILC or UILC line card
TN	lll s cc	Card location The values for this prompt are: lll (loop)=0-156 (must be an even number divisible by 4) s (shelf)=0-1 cc (card)=0-15
MISP	0-158	Loop number (must be an even number that has already been configured) If there is a BRSC configured in the IPE module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc is displayed.
CTYP	SILC UILC	Card type to be added or changed. Remove any DSLs configured for this line card before changing the card type.
REQ	...	

Remove a SILC or UILC configured for an MPH

Remove a SILC or UILC configured for an MPH by specifying its card location. Before removing the SILC or UILC, all configured DSLs must first be removed from the card by using the procedure "Remove a DSL". When the last DSL is removed, the card is automatically deleted.

Note: When removing the card, the database information is also deleted from the data block. Use LD 20 to list cards that have been removed.

LD 27 - Remove a SILC or UILC configured for an MPH

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	CARD	ISDN BRI line card
TN	lll s cc	Card location of the SILC or UILC to be removed. lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15
		Remove any DSLs that are configured for this card before removing the card.
...	...	

Print a SILC or UILC configured for an MPH

To print the configuration information for a SILC or UILC configured for an MPH, specify its card location.

LD 27 - Print a SILC or UILC configured for an MPH

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	CARD	ISDN BRI line card
TN	lll s cc	Card location lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15
...	...	

Configure a DSL for an MPH

To add or change a DSL for an MPH network interface, specify its port location and its DSL characteristics. DSL location specifies a SILC/UILC port connected to a DSL.

LD 27 - Add or change a DSL for an MPH (Part 1 of 5)

Prompt	Response	Comment
REQ	NEW CHG	Add or change a DSL ***Note:*** The defaults apply to adding, not changing, a DSL.
TYPE	DSL	DSL
DSL	lll s cc dsl#	DSL location. lll (superloop) = 0-156 (must be zero or a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
DES	x...x	Designator to assign to a DSL (ex. BUILD2) x...x = 1 to 6 alphanumeric DSL designator
CUST	0-99	Customer number
CTYP	SILC, UILC	Card type. This prompt is displayed only if the SILC or UILC has not been previously configured.
OPT	(BRIL) <cr>	Defaults to ISDN BRI line application (BRIL). Enter <cr>.
MISP	0-158	Loop number (must be an even number of a MISP that has already been configured). This prompt is displayed only if the MISP has not been assigned to the specified SILC or UILC. If there is a BRSC configured in the IPE Module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc are displayed as shown in the following example: MISP 8 BRSC 24 0 15.

LD 27 - Add or change a DSL for an MPH (Part 2 of 5)

Prompt	Response	Comment
MODE	NTAS NTFS	Network terminal line sampling mode (this prompt is displayed only if you specified the card type as SILC). The values for this prompt are: NTAS = Adaptive sampling Extended passive bus, Branched passive bus, Point-to-point bus, U interface DSL. NTFS = Fixed sampling Short passive bus.
B1CT	(VCE) (DTA) PMD IPD XPMD XIPD	B-channel 1 call type. Enter IPD for B-channel packet data using the MPH. PMD = B-channel packet data with dedicated connection from DSL to a PRI channel using external packet handler For B1CT = IPD or PMD, B-channel packet data must have been specified at the PH prompt in LD 27. IPD and PMD cannot be combined with any other options. Do not select <cr> which defaults to VCE (circuit switched voice) and DTA (circuit switched data) which may not run concurrently with packet data. XPMD = Delete B-channel packet data using external packet handler. XIPD = Delete B-channel packet data using MPH.
MPH	0-158	MPH loop number associated with B-channel 1. The MPH loop must have been configured the MISP configuration, in LD 27. ***Note:*** If an MPH loop number is to be changed, the DSL has to be first disabled and any association of the MPH with any TSP has to be removed.

LD 27 - Add or change a DSL for an MPH (Part 3 of 5)

Prompt	Response	Comment
B2CT	(VCE) (DTA) PMD IPD XPMD XIPD	B-channel 2 call type. Enter IPD for B-channel packet data using the MPH. PMD = B-channel packet data with dedicated connection from DSL to a PRI channel using external packet handler For B2CT = IPD or PMD, B-channel packet data must have been specified at the PH prompt in LD 27. IPD and PMD cannot be combined with any other options. Do not select <cr> which defaults to VCE (circuit switched voice) and DTA (circuit switched data) which may not run concurrently with packet data. XPMD = Delete B-channel packet data using external packet handler. XIPD = Delete B-channel packet data using MPH.
MPH	0-158	MPH loop number associated with B-channel 2. The MPH loop must have been configured the MISP configuration, in LD 27.
CH	1-24 1-30	***Note:*** A response to this prompt is only required for packet data implementation. Enter the PRI2 (1-30) channel number that carries B-channel 2 packet data. The B-channel must be configured for packet data by using Trunk Route Administration Program LD 16 and Trunk Administration Program LD 14. ***Note:*** This prompt appears only if the call type for B2CT is set to PMD.
LDN	0-3, (NO)	Departmental listed directory number 0-3 = Departmental listed DN specified in LD 15 NO = No departmental listed DN associated with the DSL
XLST	(0)-254	Pretranslation group (if configured in customer data block).
MTEI	1-(8)-20	Maximum number of Terminal Endpoint Identifiers, both static and dynamic combined assigned to the logical terminals on this DSL.

LD 27 - Add or change a DSL for an MPH (Part 4 of 5)

Prompt	Response	Comment
LTEI	n1 n2 mm <cr> Xmm	The Logical Terminal Endpoint Identifier(LTEI) is used to address D-channel packet data terminals. LTEI consists of two components: n1 and n2 = Logical Terminal Identifier (LTID) m = Static Terminal Identifier (TEI) The maximum number of Logical Terminal Endpoint Identifiers (LTEIs) that can be configured is defined above by the prompt MTEI. The ranges for all entries are: n1 = Logical Terminal Group (LTG) = 1-15 n2 = Logical Terminal Number (LTN) = 1-1023 m = Static TEI = 0-63 ***Note:*** LTG=15 and LTN=1023 is an invalid combination. Xm=Deletes LTID and TEI as a pair for the specified TEI. <cr>=Stops this prompt from being displayed again and skips to the next prompt. ***Note:*** This prompt is displayed only if D-channel packet data was specified for the associated MISP.
MCAL	2-(16)-32	Maximum number of calls on the DSL at one time. This includes calls waiting and on hold. Warning is received if less than 8 is specified.
MTSP	1-(8)-16	Maximum number of TSPs allowed for a DSL
PGPN	0-15	Protocol group number The protocol group should be previously added as described in "Configure a protocol group."
PRID	1- 6	Defines the protocol to be used on the DSL Selection of the protocol ID is terminal dependent. The values for this prompt are: 1=ANSI 2=ETSI 3=DMS 4=NET64 5=NUMERIS 6=NI-1 ***Note:*** A response of 6 allows the ISDN BRI Conference feature to be configured in the TSP of the DSL.
FDN	n...n	Flexible CFNA directory number. Enter a 1-13 digit DN.

LD 27 - Add or change a DSL for an MPH (Part 5 of 5)

Prompt	Response	Comment
EFD	n...n	Flexible external call CFNA DN. Enter a 1-13 digit DN.
HUNT	n...n	Hunt directory number. Enter a 1-13 digit DN.
EHT	n...n	Hunt external call directory number. Enter a 1-13 digit DN.
TGAR	(0)-31	Trunk group access restriction
NCOS	(0)-99	Network class of service
CLS		Class of service access restrictions.
		More than one class of service can be entered by separating each entry with a space. Default features shown in parenthesis are selected by pressing <cr>.
	(ICDD) ICDA	Internal Call Detail Recording (Denied) Allowed
	(MRD) MRA	Message Restriction (Denied) Allowed
	(UDI) RDI	(Unrestricted) Restricted DID
	(UNR) CTD CUN FR1 FR2 FRE SRE TLD ICDA (ICDD) <cr>	(Unrestricted) Conditionally Toll Denied Conditionally Unrestricted Fully Restricted class 1 Fully Restricted class 2 Fully Restricted Semi-Restricted Toll Denied Internal Call Detail Recording allowed (Internal Call Detail Recording denied) Enter <cr> to select the defaults.
		More than one class of service may be selected by separating each entry with a space.
REQ	...	

Remove a DSL configured for an MPH

Remove a DSL, which has been configured for an MPH, by specifying its location. To remove a DSL, first remove all the TSPs assigned to this DSL. When the last configured DSL on a card is removed, the card is removed automatically.

LD 27 - Remove a DSL configured for an MPH

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	DSL	DSL
DSL	lll s cc dsl#	DSL location lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
...	...	

Print a DSL configured for an MPH

Print the configuration information for a single DSL by specifying its location.

LD 27 - Print a DSL configured for an MPH

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	DSL	DSL
DSL	lll s cc dsl# lll s cc lll s lll	DSL information lll s cc dsl# = Prints information for the specified dsl# lll s cc = Prints information for DSLs on the specified card lll s = Prints information for DSLs in the specified shelf lll = Prints information for DSLs on the specified loop
DATE	(<cr>) x y z	Print data and display the last active date, where x = day (1-31), y = month (Jan-Dec), and z = year (1979-9999) specifies the starting date of the data to be displayed or printed.
PAGE	YES (NO)	YES = prints one DSL per page NO = prints without paging
DES	x...x, <cr>	1-digit to 6-digit alphanumeric DSL designator No designator for DSLs
NACT	YES, (NO)	Activity date is updated to current date.

Configure a TSP for an MPH

To configure a TSP to work with an MPH, define the service profiles for ISDN BRI terminals connected to a DSL, and the associated MPH packet data information.

LD 27 - Add or change a TSP for an MPH (Part 1 of 5)

Prompt	Response	Comment
REQ	NEW CHG	Add or change a TSP
TYPE	TSP	Assign TSP to a DSL
DSL	lll s cc dsl#	DSL location lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
		The DSL must have been configured using the "DSL configuration procedures."
USID	0-15	User service identifier
		0 is default TSP assigned to non-initializing terminals.
		The total number of TSPs defined for a DSL cannot exceed the maximum number of TSPs allowed for a DSL as specified by the MTSP prompt in the "DSL configuration procedures."
		A default TSP should be configured for non-initializing terminals. This is done by assigning USID=0 to the TSP.
MPHC	YES (NO)	Enter YES, to have the TSP work with an MPH.
		NO = The TSP is not used with an MPH
		Note: The status of MPHC cannot be changed. If CHG is entered in the REQ prompt, the MPHC and its stored response will be output, followed by the next applicable prompt.

LD 27 - Add or change a TSP for an MPH (Part 2 of 5)

Prompt	Response	Comment
TRMT	d b	d = Terminal type is for D-channel configuration b = Terminal type is for B-channel configuration
		If TRMT = d, then the LAPD protocol set group to be used by the MPH is the one selected in its associated DSL configuration.
		Before changing the terminal type from b to d, disable the terminal first with the DSIF command in LD 32.
		To change the terminal type, the associated MPH must have the same DNIC.
		If REQ = NEW/CHG and TRMT = b, then B1CT and/or B2CT of the associated DSL must = IPD.
		Response to TRMT largely determines the “associated MPH.” For example, if TRMT = b and BCH = 1, the MPH associated with B1CT in the DSL configuration is used. If TRMT = b and BCH = 2, the MPH associated with the B2CT is used. If TRMT = d, then the MPH selected by MISP or BRSC of associated ISDN BRI line card is used.
TEI	0-63	Static TEI for addressing terminal
		TEI is prompted only if TRMT = d. TEI is unique for the D-channel packet terminals within a DSL. An error message is printed is a TEI number if entered for more than one TSP of a DSL.
BCH	1-2	1 = TSP is associated with the B1 channel of the DSL. 2 = TSP is associated with the B2 channel of the DSL.
		The prompt BCH is given if TRMT = b
		If REQ = NEW/CHG and BCH = 1, then B1CT of associated DSL must = IPD.
		If REQ = NEW/CHG and BCH = 2, then B2CT of the associated DSL must = IPD.
		If a value to the BCH is to be changed (REQ = CHG), then the terminal has to be disabled using the DSIF command in LD 32.

LD 27 - Add or change a TSP for an MPH (Part 3 of 5)

Prompt	Response	Comment
LAPB	0-15	LAPB protocol set group number used on the MPH user interface. The prompt LAPB is given only if TRMT = b If REQ = NEW/CHG and TRMT = b, then B1CT and/or B2CT of the associated DSL must = IPD. LAPB must have been defined in LD 27.
X25P	0-15	X.25 packet protocol set group number used on the MPH user interface. If selected X.25 protocol set group does not exist, an error message is printed and the X25P prompt is repeated.
NTN	nn...nn	National Terminal Number of the TSP (1-10 digits.) ***Note:*** The Data Network Address (DNA) of the TSP is composed by combining the NTN entry with the DNIC of the associated MPH. "Associated MPH" is determined primarily by the response to the TRMT prompt. If TRMT = b, and BCH = 1, then the MPH associated with the B1CT in the DSL configuration will be used. If TRMT = b, and BCH = 2, then the MPH associated with the B2CT in the DSL configuration will be used. If TRMT = d, then the MPH selected by the Service Access Point Identifier (SAPI) separator (MISP or BRSC) of the associated ISDN BRI line card will be used.
PVC	n1 n2 <cr>	The range of the Permanent Virtual Circuit Logical Channel Number. n1 = Lowest PVC LCN (1-4095) n2 = Highest PVC LCN (1-4095) <cr> = None. The lowest and highest Logical Channel Numbers selected define the range of logical channels to be used for the specified type of call connection. The Logical Channel Numbers values must follow this format: PVC lower than IC lower than TC lower than OC. ***Note:*** Before changing the value of PVC, the associated TSP must be first disabled.

LD 27 - Add or change a TSP for an MPH (Part 4 of 5)

Prompt	Response	Comment
IC	n1 n2 <cr>	The range of Incoming Logical Channel Number n1 = Lowest incoming LCN (1-4095) n2 = Highest incoming LCN (1-4095) <cr> None. ***Note:*** Before changing the value of IC, the associated TSP must be first disabled.
TC	n1 n2 <cr>	The range of Two-way Logical Channel Number. n1 = Lowest Two-way LCN (1-4095) n2 = Lowest Two-way LCN (1-4095) ***Note:*** Before changing the value of TC, the associated TSP must be first disabled.
OC		The range of Outgoing Logical Channel Number n1 = Lowest Outgoing LCN (1-4095) n2 = Highest Outgoing LCN (1-4095) <cr> = None ***Note:*** Before changing the value of OC, the associated TSP must be first disabled.
CDR	YES (NO)	YES = Turn on internal Call Detail Recording NO = Turn off internal CDR The local packet data CDR option is selected in the TSP, but it is overridden by the CDR option selection in LD15. If CDR = NO in LD15, the local CDR option is always considered OFF. But, if CDR = YES in LD15, the local CDR option is determined by the setting for the CDR prompt in the TSP configuration. For local packet data calls, the originator selection for CDR dominates.

LD 27 - Add or change a TSP for an MPH (Part 5 of 5)

Prompt	Response	Comment
FEAT		Class of service features
	HTA	HTA = Hunt allowed (always assign if terminal has CWT capability)
	(HTD)	HTD = Hunt denied
	FNA	FNA = Call forward no answer allowed
	(FND)	FND = Call forward no answer denied
	SFA	SFA = Second level call forward no answer allowed
	(SFD)	SFD = Second level call forward no answer denied
	CFTA	CFTA = Call forward by call type allowed
	(CFTD)	CFTD = Call forward by call type denied
	MWA	MWA = Message waiting allowed
	(MWD)	MWD = Message waiting denied
	FBA	FBA = Call forward busy allowed
	(FBD)	FBD = Call forward busy denied
	HBTA	HBTA = Hunting by call type allowed
	(HBTD)	HBTD = Hunting by call type denied
		DNO1/DNO2/(DNO3) = QSIG Call Diversion Notification for calling party where:
	DNO1	DNO1 = no notification
	DNO2	DNO2 = notification without forwarded-to (diverted) party's number and name
	(DNO3)	(DNO3) = notification with forwarded-to (diverted) party's number and name when available (default).
		DNDN/(DNDY) = QSIG Call Diversion Notification for forwarded-to (diverted) party where:
	DNDN	DNDN = no notification of called party's number and name notification
	(DNDY)	(DNDY) = notification with called party's number and name when available (default).
		More than one class of service can be entered by separating each entry with a space. Press <cr> to select multiple default features shown in parenthesis.
DFDN	n...n	Default directory number Enter a 1-digit to 7-digit DN.
		This DN must be defined at the preceding DN prompt
		A DN can be associated with multiple TSPs. Only one default DN can be defined for a TSP. This DN is sent in the outgoing setup if the terminal does not send a calling line identification number with the outgoing call.
REQ	...	

Remove a TSP configured for an MPH

Before removing a TSP configured for an MPH:

- Disable the B-channel.
- Disable the TSP's associated terminal with the DSIF command in LD 32.
- If the TSP is associated with an existing PVC connection, remove the PVC first.

To remove a single TSP from a DSL, specify the DSL location and the user service identifier. Remove all TSPs from a DSL by entering **ALL** at the USID prompt.

Note: Removal of the TSP disconnects all calls associated with the TSP's D-channel packet switched data and circuit switched voice data.

LD 27 - Remove a TSP configured for an MPH

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	TSP	TSP Before removing a TSP: • Disable the B-channel. • If MPHC = YES, disable the TSP's associated terminal with the DSIF command in LD 32. • If TSP is associated with an existing PVC connection, remove the PVC first. Removal of the TSP disconnects all calls associated with the TSP's D-channel packet switched data and circuit switched voice data.
DSL	lll s cc dsl#	DSL location lll (0-156) = superloop (must be an even number divisible by 4) (0 = invalid) s (0-1) = shelf cc (0-15) = card dsl# (0-7) = DSL location
USID		User service identifier
	0-15 ALL	0-15 = Removes a specified TSP from 0 to 15 ALL = Removes all TSPs for the specified DSL
REQ	...	

Print a TSP configured for an MPH

Configuration information can be printed for a TSP configured for an MPH, based on characteristics such as user service identifier, service profile ID, and directory number.

LD 27 - Print a TSP

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	TSP	TSP

LD 27 - Print a TSP

DSL	lll s cc dsl#	DSL location
		lll (superloop) = 0-156 (even number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
		The DSL must have been configured using “DSL configuration procedures.”
OPT		Print option.
	SPID USID SUID DN DNS NTN <cr>	SPID = Prints the TSPs with the specified service profile ID USID = Prints the TSP with the specified user service id SUID = Prints the profile ID and the user service id map DN = Prints the TSPs with the specified directory numbers DNS = Prints all the directory numbers defined for the DSL NTN = Prints the TSPs that contain the specific NTN <cr> = Prints all the TSPs defined for the DSL
SPID	x...x	Enter a 1-20 digit alphanumeric service profile ID.
		This prompt appears only if OPT = SPID.
USID	0-15	User service identifier.
		This prompt appears only if OPT = USID.
DN	x...x y...y	Directory Number associated with the TSP and CLID entry in LD 15.
		This prompt appears only if OPT = DN.
NTN	1-10	NTN value (1-10 digits).
		This prompt appears only if OPT = NTN.
REQ	...	

Configure a Permanent Virtual Circuit (PVC) connection for an MPH (optional)

The craftsperson may request the MPH to establish an internal PVC connection by entering two DNA numbers (NTN1 and NTN2) and their respective Logical Channel Numbers (LCN1 and LCN2).

An external PVC connection can be established with the entries of a DNA number (NTN1 and the unique DNIC used by the MPH), its associated Logical Channel Number (LCN1), the MPH network interface (NWIF) on which NTN1 resides, and the Logical Channel Number (LCN2) for the network interface.

The following procedures describe how to add or remove a PVC connection for an MPH, and how to print PVC information.

Note: No changes to the PVC are allowed.

LD 27 - Add or change PVC connection configuration (Part 1 of 2)

Prompt	Response	Comment
REQ	NEW	Add a new data set PVC connections are not allowed to be changed spontaneously. The user has to remove the currently defined PVC connection before using REQ = NEW to redefine it with a different configuration. No changes to PVC are allowed.
TYPE	PVC	To administer the PVC connection PVC is valid type only if package #248 for MPH has been activated. A warning message notifies the user at the end of the PVC configuration that the PVC connection is enabled only if the associated TSPs and MPH network interface are enabled.
MPH	0-158	Even loop number for the MPH MPH loop number is required to identify the MPH card on which these PVC connections are to be established.
PVCN	1-4	PVC connection number A maximum of 4 PVC connections is allowed for each MPH card
XPVC	(YES) NO	YES = external PVC connection is selected NO = internal PVC connection is selected For an external PVC connection, the user may establish a PVC connection between NTN1 and the physical MPH network interface on which the NTN1 resides.
NWIF	1-3	MPH network interface identifier. NWIF prompted only if XPVC = YES. The network interface must be disabled if it is chosen to work with the configured PVC. Otherwise, an error message is printed.

LD 27 - Add or change PVC connection configuration (Part 2 of 2)

Prompt	Response	Comment
NTN1	nn..nn	nn..nn = 1-10 digits NTN1 = The first NTN of the PVC connection. NTN1 must have been associated with a configured TSP or an error message is printed. If XPVC = YES, then the NTN1 must also exist in the DNA tables associated with the selected MPH network interface. Otherwise, an error message is printed.
LCN1	1-4095	PVC Logical Channel Number associated with NTN1. LCN1 must be chosen from the range of logical channels defined in the parameters configuration of the applicable TSP. If the selected logical channel is occupied by another PVC connection, then an error message is printed and the logical channel prompt is repeated.
NTN2	nn...nn	nn..nn = 1-10 digits NTN2 = The second NTN of an internal PVC connection. NTN2 is prompted only if XPVC = NO. The user has chosen to establish an internal PVC connection.
- LCN2	1-4095	PVC Logical Channel Number associated with the MPH network interface or NTN2. The Logical Channel Number selected is associated with NTN2 for internal PVC and the MPH network interface for external PVC. LCN2 must be chosen from the range of logical channels defined in the parameters configuration of the applicable TSP or the MPH network interface. If the selected logical channel is occupied by another PVC connection, then an error message is printed and the logical channel prompt is repeated.

LD 27 - Remove PVC connection configuration data

Prompt	Response	Comment
REQ	OUT	Remove an existing data set.
TYPE	PVC	To remove the PVC connection number.

LD 27 - Remove PVC connection configuration data

Prompt	Response	Comment
MPH	0-158	Even loop number for MPH.
PVCN	1-4 <cr>	PVC connection number to be removed. <cr> = none If the selected PVC connection number does not exist, an error message is printed and the prompt PVCN is repeated.

LD 27 - Print PVC connection configuration data

Prompt	Response	Comment
REQ	PRT	Print configuration data
TYPE	PVC	To print a PVC connection data.
MPH	0-158	Even loop number for MPH.
PVCN	1-4 <cr>	PVC connection data to be printed. <cr> = Print all PVC connection data. If the selected PVC connection number does not exist, an error message is printed and the PVCN prompt is repeated.

Configure a tandem connection for an MPH (optional)

Use LD 14 to configure trunk entries to allow an MPH to be used in a tandem connection between Meridian 1 systems. The new type, TCON, provides a Meridian 1 system access to PSDN through a dedicated connection in another Meridian 1 system. The Meridian 1 establishes a dedicated connection between an incoming ISDN PRI channel (IPRI) and an outgoing ISDN PRI channel (OPRI) in the intervening Meridian 1 system.

Up to 32 tandem connections can be configured in a system. The same loop and channel cannot be used for multiple TCON.

The PRI loop must have been configured in LD17. The PRI channel must have been configured for BRI packet data in LD 16 (tie trunk routes) and LD 14 (tie trunks).

The procedures which follow describe how to add or change, remove and print an MPH tandem connection configuration, respectively.

LD 14 - Add or change a tandem connection configuration

Prompt	Response	Comment
REQ	NEW CHG	NEW = Adds a data set CHG = Drops existing connection and rebuilds it using the new PRI channels. No disabling of the previous PRI channels is required.
TYPE	TCON	To administer the tandem connection TCON is independent of the ISDN BRI line application and does not require the ISDN BRI line package to be activated.
T_TN	lll ch	lll (0-159) =The PRI loop number ch (1-23) = The PRI channel on which the dedicated connection from the other PRI channel is terminated. Prompted if REQ = CHG Enter either end of the tandem PRI connection to be changed. If the connection exists, the two PRI loop-channels are displayed.
IPRI	lll ch	Incoming PRI channel lll (0-159) = The PRI loop number ch (1-23) = The PRI channel on which the dedicated connection from the outgoing PRI channel is terminated. The PRI loop must have been configured in LD 17. The PRI channel must be configured for ISDN BRI packet data route using LD 16 and LD 14. If the channel is not free, an error message is displayed and the prompt IPRI or OPRI appears again. Enter another PRI loop number and channel number or the same loop number with a free channel number. The PRI channel for IPRI and OPRI must be different or an error message is printed.
OPRI	lll ch	Outgoing PRI channel lll (0-159) = The PRI loop number ch (1-23) = The PRI channel on which the dedicated connection from the incoming PRI channel is terminated.

LD 14 - Remove a tandem connection configuration

Prompt	Response	Comment
REQ	OUT	Remove an existing configuration data set.
TYPE	TCON	To administer the tandem connection.
T_TN	lll ch	Enter either end of the tandem PRI connection to be changed. If the connection exists, the two PRI loop-channels are displayed. lll (0-159) = The PRI loop number ch (1-23) = The PRI channel on which the dedicated connection from the other PRI channel is terminated.

LD 14 - Print a tandem connection configuration

Prompt	Response	Comment
REQ	PRT	Print an existing configuration data set.
TYPE	TCON	The tandem connection.
TN	lll ch	lll (0-159) = The PRI loop number ch (1-23) = The PRI channel on which the dedicated connection from the other PRI channel is terminated.
REQ	...	

Configure Call Detail Recording for the MPH (optional)

The following procedures describe how to add CDR information for the MPH, using LD 15 which configures the customer data block.

LD 15 - Add Call Detail Recording for the MPH

Prompt	Response	Comment
REQ:	NEW CHG MOV	Add, change, or move a data set.
TYPE	CDR	Call Detail Recording data.
..	..	..
- IMPH	YES (NO)	CDR for incoming packet data call to MPH from PSDN
- OMPH	YES (NO)	CDR for outgoing packet data call by means of the MPH to PSDN
- AXID	YES (NO)	Auxiliary Identification Output in CDR records
..	..	..

Initialize ISDN BRI terminals for an MPH

After configuring the TSPs, initialize the ISDN BRI terminals by entering the required parameter values at the terminal key pad or keyboard. The user manual shipped with each terminal provides instructions for initializing the terminal for a specific application.

Program the M5317TDX for an external packet handler

To access the Install Menu

1 Disconnect the line cord from the telephone for a few seconds, then reconnect.

2 Press and hold the Release key and the Hold key simultaneously until the display shows:

Select **ROM** to execute
BOOTROM MAINROM

3 Press the MAINROM softkey. After a few seconds, the display shows:

Select configuration menu
Install Network Lang Exit more...

Configuration for packet data

1 From the above display, press Network. The display shows:

SPID TEI SPM X.25DN more...

2 Press the TEI softkey. The display shows:

Phone Data X25 ok

Note: MPH requires static TEI assignment.

3 Press the X.25 softkey.

4 Enter your 2 digit TEI and press OK.

5 Press the X.25DN softkey.

6 Press Clear to clear out any existing data.

7 Enter your X.25 address and press OK.

8 Press the more... softkey.

9 Press the Exit softkey.

10 Press the Exit softkey again.

How to use your M5317TDX for packet data

1 You will be in the Main Menu after completing step 10 above. From the Main Menu, press the Setup softkey.

2 Press the Data softkey.

3 Select your Baud Rate, Character Size and Parity.

Note: You may use the defaults of 9600, 8 bits, no parity.

4 After setting these values, press the more... softkey.

5 Make sure the settings for DTR, CD HI, and RTS Hi are all set to YES. Press the more... softkey.

6 Press the Data softkey until the display shows X25.

7 Press Pkt/Win until the display shows No Neg. This setting results in a packet/window size of 128/2 which is the MPH's default setting. If you know your terminal is configured for a packet or window size other than this, then press Pkt/Win until the display shows the appropriate setting.

———————— ***End of Procedure*** ————————

For more details, refer to the *M5317TDX Installation and Maintenance Guide*.

Program the M5209TDcp for packet data

1 Press the Hold and Release keys simultaneously until the Main Menu appears on the set display.

MAIN MENU
CONFIG

2 Press #.

ENTER PASSWORD

3 Dial ISDN and press # to enter configuration mode.

CONFIGURATION MENU
TEI

4 Press #.

ENTER TEI VOICE
AUTO

5 Press #.

ENTER TEI PSD
XXX

6 Enter your TEI and press #.

Note: MPH requires static TEI assignment.

7 Press #.

CONFIGURATION MENU
SPID

8 Press * until EXIT appears on the display. Press #.

MAIN MENU
RING

9 Press * until DATA appears on the display. Press #.

DATA MENU
MODE

10 Press #.

SELECT DATA MODE
PACKET

11 Press #.

DATA MENU
PARAMS

12 Press * until the profile you want to use appears on the display.

DATA MENU
SELECT 0

SELECT 0 selects PROF 90 profile.
SELECT 1 selects PROF 91 profile.
DEFAULT selects the factory default profile.

13 Press # to select the desired profile.

DATA MENU
EXIT

14 Press * until SAVE appears on the display.

DATA MENU
SAVE

15 Press # to save your changes.

16 Press #. Press # again.

End of Procedure

Configure ISDN BRI trunk access

Note: ISDN BRI trunk access is not supported in North America.

Configuration order for ISDN BRI trunk access

You must configure the following components in the order listed below to configure ISDN BRI trunk access.

1 Configure an ISDN customer, using overlay 15.

2 Configure trunk pad tables, using overlay 73 (optional).

Note: The digital pad provides gain or attenuation values to condition the level of the digitized transmission signal according to the network loss plan. This determines transmission levels for the B-channel circuit-switched voice calls.

3 Configure the LAPD Protocol Group, using overlay 27.

4 Configure the ISDN BRI trunk route data block, using overlay 16.

5 Configure the MISP using overlay 27.

6 Configure the SILC and/or UILC card using overlay 27.

7 Configure trunk DSL, using overlay 27.

8 If the SILC clock is configured, enter the ISDN BRI trunk clock reference in overlay 73.

———————— ***End of Procedure*** ————————

Define a customer for a trunk

Define or change an ISDN BRI trunk access customer using the Customer Data Block (overlay 15).

LD 15 - Define a customer for a trunk

Prompt	Response	Comment
REQ:	NEW CHG	Define a new customer, or change an existing customer.
TYPE	NET	Networking Data
CUST	0-99	Customer number for Options 51C - 81C
	0-31	Customer umber for Option 11C
...	...	...

LD 15 - Define a customer for a trunk

ISDN	YES	The customer is equipped with ISDN.
...	...	...

Configure pad tables for a trunk (optional)

This is an optional procedure. Define the pad settings if required.

The digital pad provides gain or attenuation values to condition the level of the digitized transmission signal according to the network loss plan. This determines transmission levels for the B-channel circuit-switched voice calls.

LD 73 - Configure pad tables (optional**)**

Prompt	Response	Comment
REQ	NEW	New settings
TYPE	BRIT	Pad table type.
FEAT	PAD	Set the pad values used for ISDN BRIL
PDCA	1-16	Pad category table.
DFLT	(1)-16	PAD Category table. If one channel is using the specified table, then the command is aborted. Table 1 cannot be modified or deleted. The following prompts define the pad levels. The receiving pad code is ***r*** and the transmission pad code is ***t***. These entries have the range 0-26. The pad values (in decibels) relating to these codes are shown after this table.
ONP	r ... t	On-premises extension
DSET	r ... t	Meridian Digital Set
OPX	r ... t	Off-premises extension
DTT	r ... t	Digital TIE trunks
SDTT	r ... t	Digital Satellite TIE trunks
NTC	r ... t	Nontransmission compensated

LD 73 - Configure pad tables (optional**)**

TRC	r ... t	Transmission compensated
DCO	r ... t	Digital COT, FEX, WAT, and DID trunks
VNL	r ... t	VIA NET LOSS
DTO	r ... t	2Mb DTI digital TOLL office trunks
ACO	r ... t	Analog local exchange or WATS trunks
AFX	r ... t	Analog FEX trunks
ADD	r ... t	Analog DID trunks
SATT	r ... t	Analog satellite TIE trunks
ATO	r ... t	Analog TOLL office trunks
PRI2	r ... t	2Mb PRI trunk (prompted only if the 1.5/2Mb Gateway feature is equipped and TYPE=2Mb PRI)
XUT	r ... t	Analog local exchange trunk (prompted only if the 1.5/2Mb Gateway feature is equipped and TYPE=PRI2)
XEM	r ... t	Analog TIE trunk (prompted only if the 1.5/2Mb Gateway feature is equipped and TYPE=PRI2)
BRIT	r ... t	ISDN BRIT pad values. Valid inputs are 0-26. Refer to Table 4.

Table 4 shows ISDN BRI pad codes and their values. Positive dB represents loss and negative dB represents gain.

Table 4
ISDN BRI trunk pad codes and values

code	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
value (dB)	0.0	+1.0	+2.0	+3.0	+4.0	+5.0	+6.0	+7.0
code	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
value (dB)	+8.0	+9.0	+10.0	+11.0	+12.0	+13.0	+14.0	-1
code	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**
value (dB)	-2	-3	-4	-5	-6	-7	-8	-9
code	**24**	**25**	**26**					
value (dB)	-10	idle	+0.6					

Configure an LAPD a protocol group for a trunk

Add a Link Access Procedure on the D-channel (LAPD) protocol group, by using LD 27 and specifying its protocol group number. You may also change its LAPD parameters as needed or accept the default values. LAPD is a transmission protocol that specifies the transmission timers, the maximum number of retransmissions, the size of the data frame, and the number of negative acknowledgments allowed before the system issues an alarm.

LD 27 - Add or change an LAPD protocol group for a trunk

Prompt	Response	Comment
REQ	NEW	Add an ISDN protocol group

LD 27 - Add or change an LAPD protocol group for a trunk

TYPE	LAPD	LAPD Protocol group
PGPN	0-15 <cr>	Protocol group number The values for this prompt are: 0-15=Adds a specified protocol group <cr>=Stops this prompt from being displayed again
LAPD	YES (NO)	LAPD parameters —The values for this prompt are: YES = Define or modify the LAPD parameters. (NO) = Does not prompt the LAPD parameters and assigns the default values shown in ( ) to these parameters.
T200	(2)-40	Retransmission timer specifies the time delay before the system retransmits the information. Delay is in increments of 0.5 seconds.
T203	4-(20)-80	Maximum time between transmission frames Delay is in increments of 0.5 seconds.
N200	1-(3)-8	Maximum number of retransmissions of unsuccessfully transmitted information.
N201	4-(260)	Maximum number of contiguous octets or bytes of information.
K	(1)-32	Maximum number of outstanding negative acknowledgment (NAKs) allowed before alarming the system.
N2X4	0-(10)-20	For 1TR6 connectivity — number of status inquiries when the remote station is in peer busy state.
PGPN	<cr>	Press <cr> to prevent repetition of all the parameters starting with LAPD.

Remove an LAPD protocol group for a trunk

You can remove a protocol group as long as it is not assigned to a DSL. If a protocol group is assigned to a DSL, delete the DSL before removing the protocol group.

LD 27 - Remove an LAPD protocol group for a trunk

Prompt	**Response**	**Comment**
REQ	OUT	Remove an ISDN BRI component
TYPE	LAPD	Protocol group

LD 27 - Remove an LAPD protocol group for a trunk

PGPN	0-15 ALL <cr>	Protocol group number 0-15 = Removes a specified protocol group from 0-15 ALL = Removes all protocol groups <cr> = No change the protocol group is not removed. A protocol group cannot be removed if it is assigned to a DSL.
...	...	...

Print a protocol group for a trunk

Configuration information for a specific protocol group or for all protocol groups can be printed.

LD 27 - Print an LAPD protocol group for a trunk

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	LAPD	Protocol group
PGPN	0-15 <cr>	Protocol group number 0-15 = Prints a specified protocol group from 0-15 <cr> = Prints all protocol groups and the number of DSLs in each group
REQ	...	

Configure ISDN BRI trunk route data block parameters

Route data block parameters for the ISDN BRI Trunk access capability are configured using LD 16.

Note: In order to support countries that have not yet upgraded to the ETS 300 403 standard, the Meridian 1 still interworks with Central Offices conforming to the ETS 300 102 standard. So, when programming the D-Channel for PRI2 trunks (in LD 17) or a PRI2 route for ISDN trunks (in LD 16) for an ETS 300 403 interface, the following applies:

- If IFC = E403 and CNTY = ETSI (ETS 300 403 for the user side) or NET (ETS 300 403 for the network side), then the interface is fully compliant with ETS 300 403.
- If IFC = E403 and CNTY = any of the supported country entries except ETSI and NET, then the interface behaves like an ETS 300 102 extended version, that is, in addition to the existing ETS 300 102 capabilities, the bearer capability and High Layer Compatibility selection procedures (fall-back mechanism), and the basic telecommunication service identification are also implemented in order to take advantage of new teleservices, such as 7kHz telephony and Videotelephony.

  Also note that a user may still configure an interface fully compliant with the ETS 300 102 standard if IFC = EURO and CNTY = any of the supported country values.

LD 16 - Configure ISDN BRI trunk route parameters (Part 1 of 10)

Prompt	Response	Comment
REQ	NEW	Add ISDN BRI protocol group settings
TYPE	RDB	Route data block.
CUST	0-99	Customer number for Options 51C - 81C
	0-31	Customer number for Option 11C.
DMOD	<cr>	Default model number for this route
ROUT	0-511	Route number.
TKTP	TIE COT DID	TIE trunk type. COT Central Office Trunk trunk type. Direct Inward Dialing trunk type.
RCLS	<cr>	Class marked route
DTRK	YES	Digital Trunk Route
BRIP	NO	ISDN BRI packet handler route (NO is entered, since packet data is not required).
DGTP	BRI	Digital trunk type.
		The input to TKTP must be either TIE, COT, or DID.
- NASA	YES (NO)	Network Attendant Service Interface.
- MBGA	YES (NO)	Multi Business Group interface on the D Channel.

LD 16 - Configure ISDN BRI trunk route parameters (Part 2 of 10)

Prompt	Response	Comment
- IFC		DCH interface type.
	(SL1)	SL1 = Meridian SL-1
	EURO	EURO = EuroISDN
	D100	D100 = Meridian DMS-100
	D250	D250 = Meridian DMS-250
	ESS4	ESS4 = AT&T ESS#4
	ESS5	ESS5 = AT&T ESS#5
	S100	S100 = Meridian SL-100
	SS12	SS12 = SYS-12 for Norway
	AXEA	AXE = Ericsson AXE-10 for Australia
	AXES	AXS = Ericsson AXE-10 for Sweden
	D70	D70 = Japan D70
	ISIG	ISIG = ISO QSIG
	ISGF	ISIG with GF platform
	ESIG	ESIG = ETSI QSIG
	ESGF	ESIG with GF platform
	1TR6	1TR6 = Germany 1TR6
	NUME	NUME = France Numeris
	TCNZ	TCNZ = Telecom New Zealand (NEAX-61) interface.
	APAC	Asia Pacific interface.
	E403	EuroISDN Interface conforming to the ETS 300 403, or the extended ETS 300 102 version for country-specific interfaces. Refer to the Note on page 139.

LD 16 - Configure ISDN BRI trunk route parameters (Part 3 of 10)

Prompt	Response	Comment
- - CNTY		Enter the country pertaining to EuroISDN or APAC.
		For EuorISDN:
		Austria
	AUS	Denmark
	DEN	ETS 300-102 basic protocol
	(ETSI)	Finland
	FIN	Germany
	GER	Italy
	ITA	Norway
	NOR	Portugal
	POR	Sweden
	SWE	Ireland
	EIR	Holland
	DUT	Switzerland
	SWI	Belgium
	BEL	Spain
	ESP	United Kingdom
	UK	France
	FRA	Commonwealth of Independent States (Russia and the
	CIS	Ukraine)
	EAUS	Australia ETSI
		Enter country pertaining to the E403 interface. If either ETSI or NET are entered, the interface is fully compliant with ETS 300 403. See the Note on page 139.
	ETSI	ETS 300 403 for the user side.
	NET	ETS 300 403 for the network side.
		If any of the countries listed for the EURO IFC are entered, the interface functions with the extended ETS 300 102 capabilities. See the note on page 139.

LD 16 - Configure ISDN BRI trunk route parameters (Part 4 of 10)

Prompt	Response	Comment
		Enter the CNTY pertaining to Asia Pacific:
	AUST CHNA HKNG INDI INDO JAPN MSIA PHLP SING TAIW TCNZ THAI	Australia. China. Hong Kong. India. Indonesia. Japan. Malaysia. Philippines. Singapore. Taiwan. New Zealand. Thailand.
...		
- CDR	(NO) YES	YES = CDR on route (NO) = No CDR on trunk route If answer supervision is defined for the trunk, CDR records will only be generated on call completion.
...		
CLID	OPT4	OPT4 is the CLID default for the Asia Pacific interface.
PROG	 NCHG MALE MCON	Progress signal. No Change. This is the default for all Asia Pacific interfaces except Singapore, Japan, and Australia. Alert message. Connect message. This is the default for the Australia interface. ***Note:*** The PROG prompt should not be configured for APAC Japan and Singapore interfaces, since these countries do not support the Progress signal.
...	...	...

LD 16 - Configure ISDN BRI trunk route parameters (Part 5 of 10)

Prompt	Response	Comment
CPFXS	NO (YES)	Customer-defined Prefixes option. If CPFXS = NO, when constructing the Calling or Connected Line Identification, the prefixes are retrieved from the Route Data Block via the HNTN and HLCL prompts which follow. Enter NO for APAC. If CPFXS = YES, when constructing the Calling or Connected Line Identification, the prefixes are retrieved from the Customer Data Block via the HNTN and HLCL prompts in LD 15, as is currently done. This is the default response.
HNTN	0-9999	This prompt applies to APAC only if CPFXS = NO. Home National Number. This number is similar to the PFX1 number prompted in LD 15. It is added to this overlay so that this prefix can be configured on a route basis. As is the case with PFX1, the HNTN prefix can be from one-to-four digits long.
HLCL	0-9999	This prompt is applies to APAC only if CPFXS = NO. Home Location Number. This number is similar to PFX2 number prompted in LD 15. It is added to this overlay so that this prefix can be configured on a route basis. As is the case with PFX2, the HLCL prefix can be from one-to-four digits long.
...		
- DSEL		Data selection.
	7VOD	The route supports voice and data calls, and the telephony 7 kHz/Videotelephony teleservices.
	7DTA	The route supports data calls, and the telephony 7 kHz/Videotelephony teleservices.
...		
- OTL	(NO) YES	YES = CDR on outgoing toll calls (NO) = No CDR on outgoing toll calls.
...		
- OAN	(NO) YES	YES = CDR on all answered outgoing toll calls (NO) = No CDR on all answered outgoing toll calls

LD 16 - Configure ISDN BRI trunk route parameters (Part 6 of 10)

Prompt	Response	Comment
- MR	DURC ENDC STAC	Allow Advice of Charge for EuroISDN, Australia ETSI, Japan D70, or Australia (for Asia Pacific interface). DURC = Activation of the AOC-D subservice ENDC = Activation of the AOC-E subservice STAC = Activation of the AOC-S subservice.
- - RUCS	0 - 9999	Route unit cost. This prompt does not appear for Denmark or Sweden.
- - RURC	0 - 9999 (0) - 3	Route unit reference cost. Note that the formula for the route unit reference cost is: $X*10^{(-Y)}$. where X = 0 - 9999, Y = 0 - 3 The default value of X is identical to the previously entered RUCS value. This prompt does not appear for Denmark or Sweden.
- - RUCF	0 - (1) - 9999 (0) - 3	Route unit conversion factor. This prompt does not appear for Denmark or Sweden.
...	...	...
MCTS	YES	Enable Malicious Call Trace signaling for EAUS, AUST, or TCNZ.
- MCTM	(0)-30	Malicious Call Trace request timer is defined in seconds. This is the disconnection delay which is used. It overrides T306 for calls to/from Malicious Call Trace capable sets (EAUS, AUST, or TCNZ only).
- MTND	(NO) YES	Malicious Call Trace disconnect delay for tandem calls (EAUS, AUST, or TCNZ only).
...		
- SIDE	NET USR	Meridian SL-1 node type (either network or user), prompted only if IFC = SL1. If IFC is not SL-1, it defaults to USR. If IFC is SL1, it defaults to NET. ***Note:*** SIDE cannot be changed from NET to USR if NT mode members exist on the route; NT mode DSLs must be on NET side.

LD 16 - Configure ISDN BRI trunk route parameters (Part 7 of 10)

Prompt	Response	Comment
- CNEG		Channel negotiation option.
	(1)	Channel is indicated and no alternative acceptable, exclusive.
	2	Channel is indicated and any alternative acceptable, preferred.
		Note: for the APAC Singapore interface, CNEG must be set to 1.
...	...	...
- PGPN	0-15	Protocol Group, as defined previously in overlay 27.
		PGPN cannot be changed without disabling all ISDN BRI trunk members associated with this route.
- RCAP		Remote D-channel capabilities.
		Enter X followed by the option to remove the configured capability.
		This prompt is repeated until <cr> is entered.
	NCT RVQ ND1 ND2 NAS BRI COLP	NCT = Network Call Trace RVQ = Remote Virtual Queueing ND1 = Network Name Display 1 ND2 = Network Name Display 2 NAS = Network Attendant Service BRI = allows ISDN line/trunk interworking) COLP = Connected Line ID supplementary service (for APAC Indonesia, India, Taiwan, and Philippines interfaces).
	DV1I DV1O DV2I DV2O DV3I DV3O	These are QSIG SS Call Diversion Notification remote capability responses, used to configure sending of QSIG Diversion Notification Information, treatment of Rerouting request and coding of operations. If coded as Object Identifier, the remote capability ends with ‘O”, whereas for Integer Value, the remote capability ends with ‘I’. Only one remote capability is allowed.
		Refer to Table 5, “Remote Capability Meanings for ISDN BRI routes,” on page 150 for more information.

LD 16 - Configure ISDN BRI trunk route parameters (Part 8 of 10)

Prompt	Response	Comment
- RCAP (cont'd)		Enter the Operation Coding method for the QSIG/ETSI Call Completion to a Busy Subscriber supplementary service.
	CCBO CCBI XCCB	Coding by Object ID. Coding by Integer Value. Remove the CCBO or CCBI value.
		Note: CCBO and CCBI are mutually exclusive.
		Enter the Operation Coding method for the QSIG Call Completion on No Reply supplementary service.
	CCNO CCNI XCCN	Coding by Object ID. Coding by Integer Value. Remove the CCBO or CCBI value.
		Note: CCNO and CCNI are mutually exclusive.
		Enter the Operation Coding method for the QSIG Call Transfer Notification feature.
	CTI XCTI CTO XCTO	Call Transfer Operation Coding method is by Integer Value. Remove the Call Transfer Coding by Integer Value. Call Transfer Operation Coding method is by Object ID. Remove the Call Transfer Coding by Object ID.
		Note: CTO and CTI are mutually exclusive.
		Enter the Operation Coding method for the QSIG Name Display supplementary services.
	NDO NDI	NDO = Coding by Object ID (IFC should be set to ESGF). NDI = Coding by Integer Value (IFC should be set to ISGF).
		Precede the entry with an 'X' to delete it.
		Note: NDO and NDI are mutually exclusive.
	MCID	Allow Malicious Call Trace for Australia ETSI.
	MQC	Add MCDN QSIG Conversion, for the MCDN End to End Transparency.
- - MQC_FEAT		MCDN QSIG feature type. Prompted if RCAP = MQC. Precede MQC feature type with an X to remove the value.
	NAS NACD NMS	Enable NAS on QSIG. Enable NACD on QSIG. Enable NMS-MC and NMS-MM on QSIG.
...	...	...

LD 16 - Configure ISDN BRI trunk route parameters (Part 9 of 10)

Prompt	Response	Comment
TIMR	YES	Set programmable timers.
- T310	10-(10)(30)-60	Maximum time in seconds between an incoming CALL PROCEEDING message and the next incoming message. Not supported for Australia. Default values are as follows: CHNA = 30 seconds. TAIW = 30 seconds. PHLP = 10 seconds. HKNG = 10 seconds. INDI = 10 seconds. INDO = 10 seconds. JAPN = 10 seconds. MSIA = 10 seconds. SING = 10 seconds. TCNZ = 10 seconds. THAI = 10 seconds.
- - INC_T306	0-(2)-T306	Variable timer for received DISCONNECT message on incoming calls allowing in-band tone to be heard when the network sends in-band tone. T306 is the duration of the network timer in seconds. The network will stop sending after T306 times out, so the maximum time will be T306. The value is stored in two-second increments, which are rounded up. T306 can be defined up to 30 seconds for all APAC interfaces except Australia, which can have T306 defined up to 60 seconds.
- - OUT_T306	0-(30)-T306	Variable timer for received DISCONNECT message on outgoing calls allowing in-band tone to be heard when the network sends in-band tone. T306 is the duration of the network timer in seconds. The network will stop sending after T306 times out, so the maximum time will be T306. The value is stored in two-second increments, which are rounded up. T306 can be defined up to 30 seconds for all APAC interfaces except Australia, which can have T306 defined up to 60 seconds.
...	...	...

LD 16 - Configure ISDN BRI trunk route parameters (Part 10 of 10)

Prompt	Response	Comment
- OVLR	YES (NO)	Overlap Receiving Allow/Disallow OVLR will not be prompted if IFC = NUME; it will default to NO. For APAC, it will be prompted for all CNTY interfaces except TAIW.
- DIDD	(0)-15	Number of leading digits that are ignored for DID calls during Overlap Receiving.
- OVLS	YES (NO)	Allow (disallow) Overlap Sending. OVLS will not be prompted if IFC = NUME; it will default to NO. For APAC, Enter NO for Japan and Philippines. Enter YES for all other interfaces.
- OVLT	(0)-8	Overlap Timer in seconds. This timer controls the interval between the sending of INFORMATION messages. “0,” the default, means send immediately.
...	....	....

Table 5
Remote Capability Meanings for ISDN BRI routes

Remote capability	Meaning for Operation Coding	Meaning for Notification Informations	Meaning for Rerouting request
None of the following remote capabilities.	Not applicable (nothing sent)	Not sent	Not processed when received
DV1O	Sent coded as Object Identifier	Sent	Not processed when received
DV1I	Sent coded as Integer Value		
DV2O	Sent coded as Object Identifier	Not Sent	Processed when received
DV2I	Sent coded as Integer Value		
DV3O	Sent coded as Object Identifier	Sent	Processed when received
DV3I	Sent coded as Integer Value		

When using Table 5 consider the following:

- Only nodes subject to be Originating, Served, Diverted or Rerouting nodes with respect to QSIG Call Diversion Notification need to have diversion remote capability configured. Transmit nodes pass the information transparently.
- When choosing the Operation Coding Choice, the interface type should be considered. When the QSIG interface used is ISO (IFC ISGF), operations are mostly coded with Integer Values.

Only one remote capability allows the QSIG Diversion configuration on an ISDN BRI route. This remote capability gathers the three following possibilities for the route:

- coding of operations sent to the remote switch, which can be coded as either as Object Identifier or as Integer Value. If coded as Object Identifier, the remote capability ends with as 'O', whereas for Integer Value, the remote capability ends with as 'I'. This means that remote capabilities explained below in 2 and 3 are defined twice.
- sending of QSIG Diversion Notification Information to the remote switch: these informations are sent only if the remote capability is of first or third type, i.e. DV1x or DV3x, where the x is either 'I' or 'O' as explained in 1.
- treatment of Rerouting requests received from the remote switch: a rerouting request is only processed if the remote capability is of second or third type, i.e. DV2x or DV3x, where x is either 'I' or 'O' as explained above.

Configure a MISP for a trunk

To add or change a MISP for a trunk, specify its even loop number.

The MISP must be enabled by using the **ENLL l** command in Network and IPE Diagnostic Program LD 32.

LD 27 - Add or change MISP for a trunk

Prompt	Response	Comment
REQ	NEW CHG	Add or change a MISP
TYPE	MISP	MISP
LOOP	0-158	MISP loop number for Options 51C - 81C; must be an even number, with the next odd loop number unequipped.
	1-9	MISP card slot number for Option 11C
APPL	BRIT BRIE	Application type for the DSL. Precede with a "X" to remove an entered value.
		Enter BRIT for the following:

LD 27 - Add or change MISP for a trunk

		SL1 = Meridian SL-1 SS12 = SYS-12 for Norway AXE = Ericsson AXE-10 for Australia AXS = Ericsson AXE-10 for Sweden D70 = Japan D70 1TR6 = Germany 1TR6 NUME = France Numeris TCNZ = Telecom New Zealand (NEAX-61) interface. Enter BRIE for one of the following: EURO = EuroISDN ISIG = ISO QSIG ISGF = ISIG with GF platform ESIG = ETSI QSIG ESGF = ESIG with GF platform APAC = Asia Pacific APPL is prompted until <cr> is entered.
DSPD	YES (NO)	YES = D-channel Packet Switched Data (NO) = No D-channel Packet Switched Data. Use the default value (NO). Subsequent prompts will be skipped.
...	...	

Remove a MISP configured for a trunk

Remove a MISP which has been configured for a trunk by specifying its loop number. Before removing the MISP, remove all DSLs connected to SILCs and UILCs associated with the MISP.

Disable the MISP loop with the **DISL l** command in LD 32.

LD 27 - Remove a MISP configured for a trunk

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	MISP	MISP

LD 27 - Remove a MISP configured for a trunk

LOOP	0-158	Loop number for Options 51C - 81C. Must be an even number.
	1-9	MISP card slot number for Option 11C. The MISP must be disabled before removing it.
		All BRSCs and SILC and/or UILC DSLs associated with the MISP must be removed before removing the MISP. See the section "Remove a SILC or UILC configured for a trunk" found later in this chapter.
REQ	...	

Print a MISP configured for a trunk

Print the configuration information for a MISP which has been configured for a trunk by specifying its network loop number. If the MISP network loop number is not known, use LD 22 to print the system configuration.

LD 22 - Print a MISP configured for a trunk

Prompt	Response	Comment
REQ	PRT	Prints an ISDN BRI component
TYPE	MISP	Print the MISP data.
LOOP	0-158	Loop number for the MISP for Options 51C - 81C (must be an even number.)
	1-9	MISP card slot number for Option 11C
	<cr>	Print all MISPs in system.

Configure a SILC or UILC for a trunk

Add or change a new SILC or UILC for trunk access by specifying its location, card type, and the MISP network loop that this card uses to transmit and receive signaling.

Note: This step may be skipped and the card type specified when configuring the DSL in "Add a DSL for a trunk." The following procedure is used when configuring the SILC or UILC cards without configuring their DSLs**.**

LD 27 - Add or change a SILC or UILC for a trunk

Prompt	Response	Comment
REQ	NEW CHG	Add or change a SILC or UILC line card
TYPE	CARD	SILC or UILC line card
TN	lll s cc	Card location for Options 51C - 81C. The values for this prompt are: lll (loop)=0-156 (must be an even number, divisible by 4) s (shelf)=0-1 cc (card)=0-15
	c	card location for Option 11C c (card) = 1-20
MISP	0-158	Loop number for Options 51C - 81C. Must be an even number that has already been configured.
	1-9	MISP card slot number for Option 11C.
CTYP	SILC UILC	Card type to be added or changed. Remove any DSLs configured for this line card before changing the card type.

Remove a SILC or UILC configured for a trunk

Remove a SILC or UILC which has been configured for a trunk by specifying its card location. Before removing the SILC or UILC, all configured DSLs must first be removed from the card by using the "Remove a DSL configured for a trunk" procedure. When the last DSL is removed, the card is automatically deleted.

When removing the card, the database information is also deleted from the data block. Use LD 20 to list cards that have been removed.

LD 27 - Remove a SILC or UILC configured for a trunk

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	CARD	ISDN BRI line card

LD 27 - Remove a SILC or UILC configured for a trunk

TN	lll s cc	Card location for Options 51C - 81C. lll (superloop) = 0-156 (must be an even number, divisible by 4) s (shelf) = 0-1 cc (card) = 0-15
	c	Card location for Option 11C c (card) = 1-20
		Remove any DSLs that are configured for this card before removing the card.
...	...	

Print a SILC or UILC configured for a trunk

To print the configuration information for a SILC or UILC which has been configured for a trunk, specify its card location.

LD 27 - Print a SILC or UILC configured for a trunk

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	CARD	ISDN BRI line card
TN	lll s cc	Card location for Options 51C - 81C. lll (superloop) = 0-156 (must be a, even number, divisible by 4) s (shelf) = 0-1 cc (card) = 0-15
	c	Card location for Option 11C c (card) = 1-20
...	...	

Configure a DSL for a trunk

To add or change a DSL for trunk access, specify its port location and its DSL characteristics. DSL location specifies a SILC/UILC port connected to a DSL.

You can change the characteristics of a DSL by changing one or more parameters to adapt it to new transmission or feature requirements. If you wish to skip a parameter, press the Enter key and the next prompt will appear. The DSL must be idle or disabled before making a change. Use the **STAT l s c dsl#** and **DISU l s c dsl#** commands in LD 32 to query the status of the DSL and to disable it.

LD 27 - Add or change a DSL for a trunk (Part 1 of 4)

Prompt	Response	Comment
REQ	NEW CHG	Add or change a DSL
TYPE	DSL	DSL
DSL	lll s cc dsl#	DSL location for Options 51C - 81C lll (superloop) = 0-156 (must be zero or a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
	c dsl#	DSL location for Option 11C. c (card) = 1-20 dsl# (DSL number) = 0-7
APPL	BRIT BRIE	Application type for the DSL. Precede with a “X” to remove an entered value. Enter BRIT for the following: SL1 = Meridian SL-1 SS12 = SYS-12 for Norway AXE = Ericsson AXE-10 for Australia AXS = Ericsson AXE-10 for Sweden D70 = Japan D70 1TR6 = Germany 1TR6 NUME = France Numeris TCNZ = Telecom New Zealand (NEAX-61) interface.

LD 27 - Add or change a DSL for a trunk (Part 2 of 4)

Prompt	Response	Comment
		Enter BRIE for Enhanced ISDN BRI trunking. BRIE is entered for one of the following: EURO = EuroISDN ISIG = ISO QSIG ISGF = ISIG with GF platform ESIG = ETSI QSIG ESGF = ESIG with GF platform APAC = Asia Pacific APPL is prompted until <cr> is entered.
CUST	0-99	Customer number
CTYP	SILC UILC	The card type (enter SILC or UILC as appropriate).
MISP	0-158	Loop number for Options 51C - 81C (must be an even number of an already configured MISP).
	1-9	MISP card slot number for Option 11C.
MODE	(TE) NT	The mode for the trunk DSL. TE is entered for Terminal Equipment, NT is used for Network Termination. This prompt is displayed only if SILC was specified as the card type. For UILC, this entry defaults to NT mode. For SILC, the default is TE. ***Note:*** The mode cannot be changed from TE to NT if the clock on the DSL is referenced in the Digital Data Block or the DTI2/PRI2 system data. The reference must be first removed. If the mode is changed to NT, CLOK will be set to NO.
B1CT	VCE DTA	B-Channel 1 call type is voice and data, for the EuroISDN 7kHz/Videotelephony Teleservice. ***Note***: At least one of the B-Channels must be configured for voice and data.
B2CT	VCE DTA	B-Channel 2 call type is voice and data, for the EuroISDN 7kHz/Videotelephony Teleservice. ***Note***: At least one of the B-Channels must be configured for voice and data.
...		

LD 27 - Add or change a DSL for a trunk (Part 3 of 4)

Prompt	Response	Comment
MTFM	YES (NO)	Enable/Disable multi-frame option, prompted only for TE mode DSLs. If enabled this prompt allows you to receive more diagnostic messages.
TKTP	TIE COT DID	Trunk type
CLOK	YES (NO)	Whether this trunk DSL is provisioned for clock source. This prompt appears if the following conditions are met: - the card type is SILC - the DSL# is 0 or 1 - the trunk DSL has been defined as TE mode ***Note:*** The clock prompt cannot be changed from YES to NO if the clock on the DSL is referenced in the Digital Data Block or the DTI2/PRI2 system data. The reference must be first removed. Also, you cannot out a trunk DSL if an active clock exists on it and is referenced in the Digital Data Block or the DTI2/PRI2 system data; this reference must be first removed.
PDCA	(1)-16	Pad table number (previously configured in LD 73) to be associated with this DSL
ROUT	0-511	Route number for the trunk DSL. The specified route must match the ISDN BRI route type as well as the trunk type specified at the TKPT prompt. If the DSL is in the NT mode (MODE = NT in LD 27), the entered route must be on the network side (SIDE = NET in LD 16).
B1	YES (NO)	Configure B Channel 1. If REQ = NEW, a response to this prompt is not required, because B1 parameters are mandatory. The system will automatically display the prompts that follow. If REQ = CHG and ROUT was changed, B1 will automatically be YES, since a new member number must be entered.
MEMB	1-254	Route member number to be associated with B-channel 1.
TGAR	(0)-31	Trunk Group Access Restriction.
NCOS	(0)-99	Network Class of Service Group Number

LD 27 - Add or change a DSL for a trunk (Part 4 of 4)

Prompt	Response	Comment
CLS		Class of Service options.
	(APN) APY (UNR) CTD CUN FR1 FR2 FRE SRE TLD MRA (MRD) PGNA (PGND)	APN = ACD Priority not allowed APY = ACD Priority allowed UNR = Unrestricted (default) CTD = Conditionally Toll Denied (valid for TIE trunks only) CUN = Conditionally Unrestricted (valid for TIE trunks only) FR1 = Fully Restricted class 1 (valid for TIE trunks only) FR2 = Fully Restricted class 2 (valid for TIE trunks only) FRE = Fully Restricted (valid for TIE trunks only) SRE = Semi-Restricted (valid for TIE trunks only) TLD = Toll Denied (valid for TIE trunks only). MRA = Message Registration Allowed (assigning meters to ISDN BRI sets, for Advice of Charge for EuroISDN, APAC (Australia and Japan), or Australia-AXE and Japan D70. MRD = Message registration denied. PGNA = Call Page Network Wide Allowed. (PGND) = Call Page Network Wide Denied.
		Input is accepted until <cr> is entered.
B2	YES (NO)	Configure B Channel 2.
		If REQ = NEW, and the default of NO is entered to this prompt, all parameters entered for B1 will be applied to B2, except the route member number will be an unused value. The message “B2 will use Route # Member #” will be displayed.
		If REQ = CHG, if NO is entered and ROUT was changed, all parameters for B2 will remain the same except that the route member will be an unused member number. The message “B2 will use Route # Member #” will be displayed.
MEMB	1-254	Route member number to be associated with B-channel 2.
TGAR	(0)-31	Trunk Group Access Restriction.
NCOS	(0)-99	Network Class of Service Group Number

Remove a DSL configured for a trunk

Remove a DSL which has been configured for a trunk by specifying its location. When the last configured DSL on a card is removed, all active calls are dropped.

The DSL must be idle or disabled before being removed. Use the **STAT l s c dsl#** and **DISU l s c dsl#** commands in LD 32 to query the status of the DSL and to disable it.

LD 27 - Remove a DSL configured for a trunk

Prompt	Response	Comment
REQ	OUT	Remove an ISDN BRI component
TYPE	DSL	DSL
DSL	lll s cc dsl#	DSL location for Options 51C - 81C. lll (superloop) = 0-156 (must be a number divisible by 4) s (shelf) = 0-1 cc (card) = 0-15 dsl# (DSL location) = 0-7
	c dsl#	DSL location for Option 11C. c (card) = 1-20 dsl# (DSL number) = 0-7
...	...	

Print a DSL configured for a trunk

Print the configuration information for a single DSL by specifying its location.

LD 27 - Print a DSL configured for a trunk

Prompt	Response	Comment
REQ	PRT	Print an ISDN BRI component
TYPE	DSL	DSL
DSL	lll s cc dsl# lll s cc lll s lll	DSL information for Options 51C - 81C. lll s cc dsl# = Prints information for the specified dsl# lll s cc = Prints information for DSLs on the specified card lll s = Prints information for DSLs in the specified shelf lll = Prints information for DSLs on the specified loop
	c dsl#	DSL information for Option 11C c (card) = 1-20 dsl# (DSL number) = 0-7
...	...	...

Configure a trunk clock reference source

In the case where an ISDN BRI trunk is providing a reference clock source to the system clock controller, the Digital Data Block (overlay 73) must be modified as follows.

Note: Clock signaling is only supported on DSL1 and DSL2.

LD 73 - Configure a trunk clock reference source, for 1.5 Mb PRI/DTI

Prompt	Response	Comment
REQ	NEW	New settings.
TYPE	DDB	Digital data block.
PREF	l	Loop number of the primary clock source from a PRI/DTI loop pack for Options 51C - 81C.
	c	Card slot number of the PRI/DTI/SILC card for option 11C.
	l s c	Location of the primary clock source from a ISDN BRI SILC pack (DSL0) for Options 51C - 81C.
SREF	l	Loop number of the secondary clock source from a PRI/DTI loop pack for Options 51C - 81C.
	l s c	Location of the secondary clock source from a ISDN BRI SILC pack (DSL1) for Options 51C - 81C.
	c	Card slot number of the PRI/DTI/SILC card for Option 11C
		PREF SILC may be different than SREF SILC when it is providing the reference clock source.
...	...	...

Note: Clock signaling is only supported on DSL1 and DSL2.

LD 73 - Configure trunk clock reference source, for 2.0 Mb PRI/DTI

Prompt	Response	Comment
REQ	NEW	New settings.
TYPE	DTI2 PRI2	Digital system data block.
FEAT	SYTI	Digital system timers and counter (only one set per system).
...	...	...

LD 73 - Configure trunk clock reference source, for 2.0 Mb PRI/DTI

PERS	0-(100)-256	Persistence timer for group II problems.
PREF CK0	l	Loop number of the primary reference clock for Clock Controller 0, from a PRI2/DTI2 loop pack, for Options 51C - 81C.
	l s c	Location of the primary reference clock for Clock Controller 0, from an ISDN BRI SILC pack (DSL0), for Options 51C - 81C.
	c	Card slot number of PRI2/DT12/SILC card, for Option 11C.
PREF CK1	l	Loop number of the primary reference clock for Clock Controller 1, from a PRI2/DTI2 loop pack for Options 51C - 81C.
	l s c	Location of the primary reference clock for Clock Controller 1, from an ISDN BRI SILC pack (DSL0), for Options 51C- 81C.
SREF CK0	l	Loop number of the secondary reference clock for Clock Controller 0, from a PRI2/DTI2 loop pack, for Options 51C - 81C.
	l s c	Location of the secondary reference clock for Clock Controller 0, from an ISDN BRI SILC pack (DSL1) for Options 51C - 81C.
SREF CK1	l	Loop number of the secondary reference clock for Clock Controller 1, from a PRI2/DTI2 loop pack.
	l s c	Location of the secondary reference clock for Clock Controller 1, from an ISDN BRI SILC pack (DSL1).
		PREF SILC may be different than SREF SILC when it is providing the reference clock source.
	c	Card slot location of the PRI2/DTI2/SILC for Option 11C.

Sample configurations

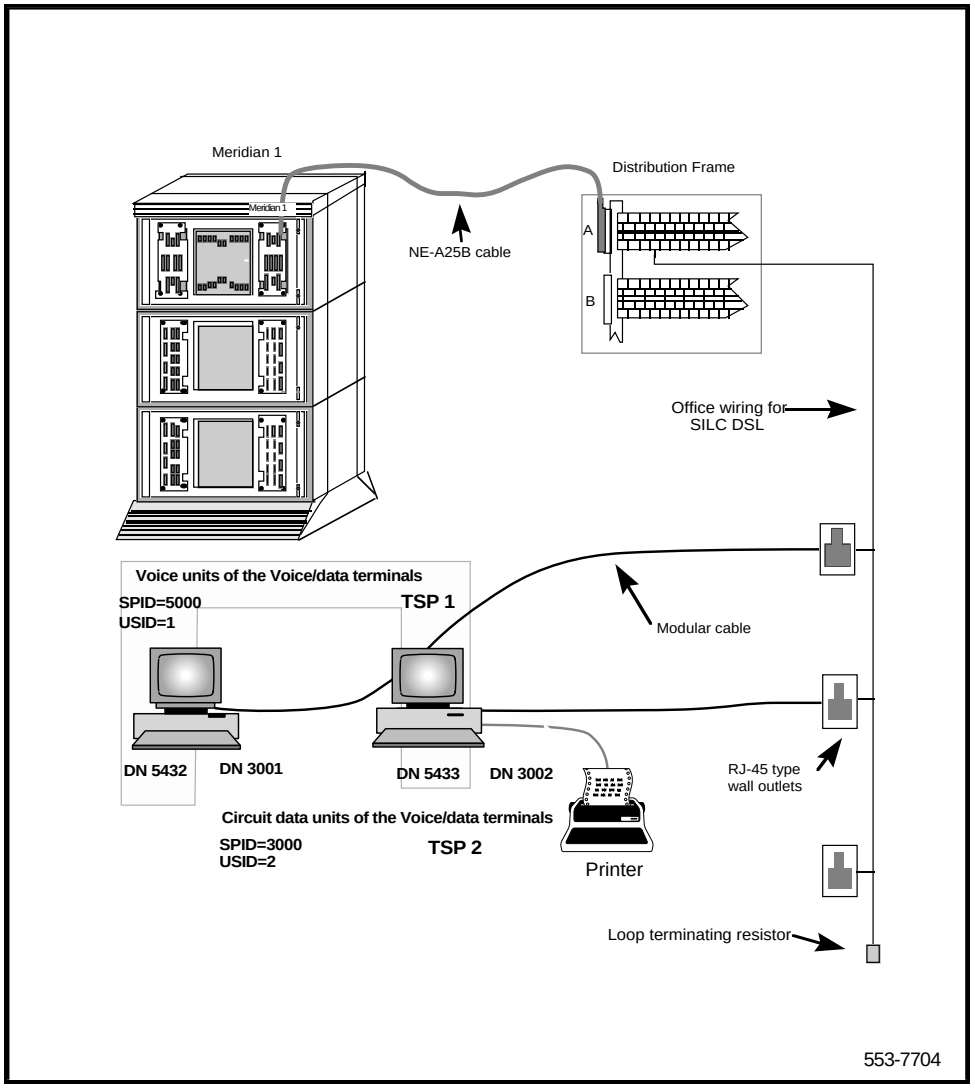
This chapter provides typical examples of how to configure a line application, an external and integrated packet handler, and a trunk access application.

Note: These examples pertain to an Option 51C - 81C system.

Example one: Configure a line application

This example shows how to configure a typical ISDN BRI line application to an existing Meridian 1 system. The task is to configure a DSL to support circuit switched integrated voice and data terminals. Figure 1 illustrates these terminals and shows that each transmission mode requires a different TSP and that the same TSP can be assigned to multiple directory numbers on the same DSL.

Figure 1
DSL terminal configuration



Configuration procedures

Procedure 5
Configure the ISDN BRI line application

To configure ISDN BRI service shown in Figure 1, follow the steps below.

1 After logging in to access LD 27, enter LD 27 at the prompt.

2 Configure the LAPD protocol to use the ANSI standard of transmission with specific LAPD transmission characteristics as follows:

Table 6
Configure the LAPD protocol

Prompt	Response	Comment
REQ	NEW	Add an ISDN BRI component
TYPE	LAPD	To administer the LAPD protocol group.
PGPN	1 <cr>	Protocol group number
LAPD	YES	LAPD parameters
T200	4	Maximum retransmission timer is 2 seconds (in units of 0.5 second)
T203	60	Maximum time between frames is 60 seconds (in units of 0.5 second)
N200	6	Maximum number of retransmissions
N201	200	Maximum number of information octets
K	10	Maximum number of outstanding NAKs
		Displays number of DSLs defined.
PGPN	<cr>	
REQ	...	

3 Configure the MISP located on network loop number 8 as follows:

Table 7
Configure the MISP

Prompt	Response	Comment
REQ	NEW	Add an ISDN BRI component
TYPE	MISP	MISP
LOOP	8	Loop number
APPL	BRIL <cr>	ISDN BRI line application
DPSD	NO	None of the DSL line cards directly connected to the MISP have D-channel Packet Switched Data
REQ		

4 Add a BRSC linked to superloop 24, located in IPE Module 0, in IPE card slot 15. Specify that the BRSC is connected to the MISP at loop 8.

Table 8
Add a BRSC

Prompt	Response	Comment
REQ	NEW	New data
TYPE	BRSC	Add a BRSC
BRSC	24 0 15	TN of the BRSC being added
MISP	8	MISP loop number The MISP where layer 3 packets are sent
DPSD	NO	There is no D-channel Packet Switched Data
REQ		

5 Configure a SILC linked to superloop 24, located in IPE Module 0, in IPE card slot 0 as follows:

Table 9
Configure a SILC

Prompt	Response	Comment
REQ	NEW	Add an ISDN BRI component
TYPE	CARD	ISDN BRI line card
TN	24 0 0	Card location
		Because there is a BRSC configured in the IPE Module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc are displayed: MISP 8 BRSC 24 0 15
CTYP	SILC	Card type
REQ		

6 Configure SILC port 1 to support the terminals in Figure 1. Specify DSL parameters for an extended passive loop that requires adaptive sampling. See *ISDN Basic Rate Interface: Product Description* (553-3901-100) for a description of the extended passive loop configuration.

Table 10
Configure the DSL for SILC port 1 (Part 1 of 2)

Prompt	Response	Comment
REQ	NEW	Add an ISDN BRI component
TYPE	DSL	DSL
DSL	24 0 0 1	DSL location
DES	BLDG1	DSL is in Building 1
CUST	1	Customer number
OPT	<cr>	ISDN BRI line application
MODE	NTAS	Network terminal mode Adaptive sampling (extended passive loop)
B1CT	VCE DTA	B-channel 1 call type Supports integrated voice and data terminal
B2CT	VCE DTA	B-channel 2 call type Supports integrated voice and data terminal
LDN	NO	Listed directory number
XLST	0	Pretranslation group
MTEI	6	Maximum number of Terminal Endpoint Identifiers, both static and dynamic
LTEI	<cr>	LTEI is skipped because there is no D-channel packet data
MCAL	16	Maximum number of calls

Table 10
Configure the DSL for SILC port 1 (Part 2 of 2)

Prompt	Response	Comment
MTSP	8	Maximum number of TSPs
PGPN	1	Protocol group number
PRID	6	ISDN BRI Conference feature
FDN	<cr>	Flexible Call Forward No Answer (CFNA) directory number denied
EFD	<cr>	Flexible external call CFNA DN denied
HUNT	<cr>	Hunt directory number denied
EHT	<cr>	Hunt external call directory number denied
TGAR	0	Trunk group access restriction
NCOS	0	Network class of service
CLS	UNR ICDD	Class of service Unrestricted, Internal CDR denied

7 Configure the TSPs for circuit switched voice and circuit switched data for the terminals shown in Figure 1 as follows:

Table 11
Configure the TSPs (Part 1 of 5)

Prompt	Response	Comment
REQ	NEW	Add a TSP
TYPE	TSP	TSP
DSL	24 0 0 1	DSL location
USID	1	User service identifier
MPHC	NO	The TSP is not used with a Meridian 1 Packet Handler.
SPID	5000 <cr>	Service profile ID
FEATID	A06 15 <cr>	A06 = a 6-party ISDN BRI Conference 15 is the Feature Activation ID, the number associated with ISDN BRI Conference on this ISDN BRI terminal. 15 is assumed for the Feature Indication ID, the number associated with ISDN BRI Conference on this Meridian 1 system. If no entry is made for it, the Feature Indication ID number uses the same number as entered for the Feature Activation ID. FEATID is prompted when PRID = 6 in the DSL. Recommended terminal assignments are: M5317TDX = 15 M5209TDcp = 9
DN	5432 1	Directory number to be associated with the TSP, and the CLID entry.
- CT	VCE	Directory number call type is circuit switched voice
MCAL	8	Maximum number of calls on TSP
CLIP	YES	Displays calling party DN on incoming calls
PRES	NO	Does not display DN to the called party on outgoing calls

Table 11
Configure the TSPs (Part 2 of 5)

Prompt	Response	Comment
FEAT	HTA FNA CFTA SFD MWA	Class of service Hunt allowed Call Forward No Answer allowed Call Forward by Call Type allowed Second level Call Forward No Answer denied Message waiting allowed
DN	5433 2	Directory number associated with the TSP, and the CLID entry.
- CT	VCE	Directory number call type is circuit switched voice
MCAL	4	Maximum number of calls
CLIP	YES	Calling party number displayed on the called party terminal
PRES	YES	Displays DN to the called party on outgoing calls
FEAT	HTA FNA CFTA SFD MWA	Class of service Hunt allowed Call Forward No Answer allowed Call Forward by Call Type allowed Second level Call Forward No Answer denied Message waiting allowed
DN	<cr>	
DFDN	5432	Default directory number
REQ	NEW	Add a TSP
TYPE	TSP	TSP
DSL	24 0 0 1	DSL location
USID	2	User service identifier
MPHC	NO	The TSP is not used with a Meridian 1 Packet Handler.
SPID	3000 <cr>	Service profile ID

Table 11
Configure the TSPs (Part 3 of 5)

Prompt	Response	Comment
FEATID	A06 15 <cr>	A06 = a 6-party ISDN BRI Conference 15 is the Feature Activation ID, the number associated with ISDN BRI Conference on this ISDN BRI terminal. 15 is assumed for the Feature Indication ID, the number associated with ISDN BRI Conference on this Meridian 1 system. If no entry is made for it, the Feature Indication ID number uses the same number as entered for the Feature Activation ID. FEATID is prompted when PRID = 6 in the DSL. Recommended terminal assignments are: M5317TDX = 15 M5209TDcp = 9
DN	3001 3	Directory number to be associated with the TSP, and the CLID entry.
- CT	DTA	Directory number call type is data
MCAL	1	Maximum number of calls
CLIP	YES	Displays calling party DN on incoming calls
PRES	YES	Displays DN to the called party on outgoing calls
FEAT	HTD FND CFTD SFD MWD	Class of service Hunt denied Call Forward No Answer denied Call Forward by Call Type denied Second level Call Forward No Answer denied Message Waiting denied
DN	3002 4	Directory number to be associated with the TSP, and the CLID entry.
- CT	DTA	Directory number call type is data
MCAL	8	Maximum number of calls
CLIP	YES	Displays calling party DN on incoming calls
PRES	NO	Does not display DN to the called party on outgoing calls

Table 11
Configure the TSPs (Part 4 of 5)

Prompt	Response	Comment
FEAT	HTD FND CFTD SFD MWD	Class of service Hunt denied Call Forward No Answer denied Call Forward by Call Type denied Second level Call Forward No Answer denied Message waiting denied
DN	<cr>	
DFDN	3001	Default directory number
REQ	NEW	Add a TSP
TYPE	TSP	TSP
DSL	24 0 0 1	DSL location
USID	0	User service identifier
MPHC	NO	The TSP is not used with a Meridian 1 Packet Handler.
SPID	5000 <cr>	Service profile ID
FEATID	A06 15 <cr>	A06 = a 6-party ISDN BRI Conference 15 is the Feature Activation ID, the number associated with ISDN BRI Conference on this ISDN BRI terminal. 15 is assumed for the Feature Indication ID, the number associated with ISDN BRI Conference on this Meridian 1 system. If no entry is made for it, the Feature Indication ID number uses the same number as entered for the Feature Activation ID. FEATID is prompted when PRID = 6 in the DSL. Recommended terminal assignments are: M5317TDX = 15 M5209TDcp = 9
DN	2000	Directory number to be associated with TSP
- CT	VCE	Directory number call type is circuit switched voice

Table 11
Configure the TSPs (Part 5 of 5)

Prompt	Response	Comment
MCAL	1	Maximum number of calls
CLIP	NO	Does not display calling party DN on incoming calls
PRES	NO	Does not display DN to the called party on outgoing calls
FEAT	HTD FND CFTD SFD	Class of service Hunt denied Call Forward No Answer denied Call Forward by Call Type denied Second level Call Forward No Answer denied
DN	4000	Directory number associated with TSP
- CT	DTA	Directory number call type is data
MCAL	1	Maximum number of calls
CLIP	NO	Displays calling party DN on incoming calls
PRES	NO	Does not display DN to the called party on outgoing calls
FEAT	HTD FND CFTD SFD	Class of service Hunt denied Call Forward No Answer denied Call Forward by Call Type denied Second level Call Forward No Answer denied
DFDN	2000	Default directory number
DN	<cr>	
REQ	END	Terminates the program and saves the configuration

8 Enable the MISP using ENLL 8 in LD 32.

9 Enable the BRSC using ENLC 24 0 15 in LD 32.

10 Enable all the terminals on DSL 24 0 0 1 using **ENLU 24 0 0 1** in LD 32.

11 Follow the instructions in the User manual for the specific terminal and enter the appropriate service profile IDs (SPIDs) for the voice and data circuits of the integrated voice and data terminals as follows:

For the voice circuit of the two terminals, enter at each terminal the SPID number **5000** at the SPID prompt to define TSP1

For the circuit data of the two terminals, enter each terminal SPID number **3000** at the SPID prompt to define TSP2.

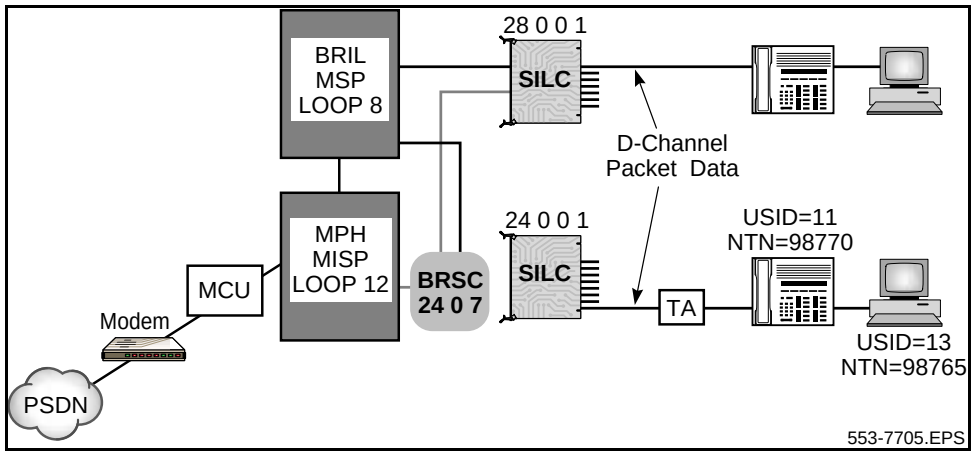
End of Procedure

Example two: Add an MPH

Configuration example two adds an ISDN BRI MPH application to a Meridian 1 with an existing ISDN BRI configuration. The task is to configure a DSL to support D-channel and B-channel packet data terminals using the MISP as an MPH. The MPH has a Meridian Communication Unit (MCU) connection to the Packet Switched Data Network (PSDN).

Figure 2 illustrates these terminals.

Figure 2
DSL terminal configuration with D-channel and B-channel packet data



Configuration procedures

Procedure 6
Configure the ISDN BRI service

To configure ISDN BRI service shown in Figure 2, follow the steps below. Use LD 27 unless noted otherwise.

1 Configure the LAPD protocol to set up layer 2 as follows:

Table 12
Configure the LAPD protocol

Prompt	Response	Comment
REQ	NEW	Add an ISDN BRI component
TYPE	LAPD	To administer protocol group
PGPN	1	Protocol group number
LAPD	YES	
- T200	4	Maximum retransmission timer is 2 seconds (in units of 0.5 second)
- T203	60	Maximum time between frames is 60 seconds (in units of 0.5 second)
- N200	6	Maximum number of retransmissions
- N201	200	Maximum number of information octets
- K	10	Maximum number of outstanding NAKs
REQ	...	

2 Configure the LAPB protocol to set up Layer 2 parameters as follows:

Table 13
Configure the LAPB protocol

Prompt	Response	Comment
REQ	NEW	Add an ISDN BRI component
TYPE	LAPB	To administer the LAPB protocol group
PGPN	2	LAPB protocol group number
LAPB	NO	Because LAPB = NO and REQ = NEW, the remaining prompts for the LAPB parameters are not given and defaults are assigned. T1 = 3 seconds, T2 = 2 seconds, and T3 = 6 seconds.

3 Configure the X.25 protocol to set up Layer 3 parameters as follows:

Table 14
Configure the X.25 protocol

Prompt	Response	Comment
REQ	NEW	Add an ISDN BRI component
TYPE	X25P	To administer the X.25 protocol group
PGPN	3	X.25 protocol set group number
X25P	NO	Because X.25 = NO and REQ = NEW, the remaining prompts for theX.25 parameters are not given and defaults are assigned. T10/T20, T11/21, T12/T22, and T13/23 all equal 180 seconds.

4 Configure the DNA table with a range of 20 numbers, 98765 through 98784 as follows:

Table 15
Configure the DNA tables

Prompt	Response	Comment
REQ	NEW	Add DNA tables
TYPE	DNAT	To administer the DNA tables
DNAT	4	DNA table number 4 is associated with MPH network interface.
DNIC	4321	Data Network Identification Code (DNIC) for the table
NTN	98765 20	Network Terminal Number (NTN) for the selected table and the range of numbers.
REQ	...	

5 Configure the tie trunk route for packet data in LD 16.

Table 16
Configure the tie trunk route for packet data (LD 16)

Prompt	Response	Comment
REQ	NEW	Add ISDN BRI protocol group settings
TYPE	RDB	Route data block
CUST	99	Customer number
ROUT	1	Route number
TKTP	TIE	Trunk route type
...	...	
DTRK	YES	Digital trunk route
BRIP	YES	Packet handler route ***Note:*** Prompted only if DTRK = YES.
ACOD	xxxxxx	Trunk route access code
TARG	<cr>	Access restriction group number
CNTL	<cr>	Changes to control timers
...	...	...

6 Configure the tie trunk for packet data in LD 14.

Table 17
Configure the tie trunk for packet data (LD14)

Prompt	Response	Comment
REQ	NEW	Enter new trunk data
TYPE	TIE	Trunk type
TN	24 00	Loop, channel number
CUST	99	Customer number
NCOS	<cr>	Network class of service group
RTMB	1	Route and route member
MNDN	<cr>	Manual directory number
TGAR	<cr>	Trunk group access restriction
CLS	<cr>	Unrestricted class of service
...	...	...

7 Use LD 11 to configure the Meridian Communication Unit (MCU).

Table 18
Add an MCU network interface (LD 11)

Prompt	Response	Comment
REQ	NEW	Add a data set.
TYPE	MCU	To administer the MCU
TN	24 00 16 30	
CDEN	4d	Quadruple density (not prompted for superloops)
DES	a	Designator
CUST	99	Customer number
MPHI	YES	MCU is used as an MPH network interface.
OPE	<cr>	No change to data port parameters If OPE = NO, LD11 is completed.
...	...	...

8 Configure MISP loop number 12 for an MPH as follows:

Table 19
Configure the MISP for an MPH

Prompt	Response	Comment
REQ	NEW	Add a MISP
TYPE	MISP	To administer the MISP card
LOOP	12	MISP loop number
APPL	MPH <cr>	MPH application
PRFX	1	Prefix to be used by the DNA tables of the MPH
NTNO	YES	PSDN present NTN only
DNIC	4321	The Data Network ID Code for the DNA used with the MPH
NWIF	2	The MPH network interface identifier for configuration
TN	24 00 16 30	TN of the MCU on which the dedicated connection from the MPH is terminated
- LAPB	2	The LAPB protocol set group number to be used on the MPH network interface
- X25P	3	The X.25 protocol set group number to be used on the MPH network interface
- PVC	1 1	The range of Permanent Virtual Circuit Logical Channel Numbers
- IC	300 400	The range of Incoming Logical Channel Numbers
- TC	500 700	The range of Two-way Logical Channel Numbers
- OC	701 900	The range of Outgoing Logical Channel Numbers
- DNAT	4	The DNA table associated with the MPH network interface

9 Configure MISP on loop 8 with the MPH on loop 12 to add the ISDN BRI line application:

Table 20
Configure the MISP for an ISDN BRI line application

Prompt	Response	Comment
REQ	NEW	Add a MISP
TYPE	MISP	To administer the MISP card
LOOP	8	MISP loop number
APPL	BRIL	BRIL = ISDN BRI line application
DPSD	YES	There is D-channel Packet Switched Data.
MPHC	YES	DPSD are routed to the MPH card
MPH	12	The MPH loop on which the dedicated connection from the MISP is terminated

10 Add a BRSC at superloop 24, shelf number 0 and card number 7.

Table 21
Configure the BRSC

Prompt	Response	Comment
REQ	NEW	Add a BRSC
TYPE	BRSC	To administer a BRSC
BRSC	24 0 7	BRSC superloop number, shelf number, card number.
MISP	8	BRSC is associated with MISP loop number 8
DPSD	YES	There is D-channel Packet Switched Data.
MPHC	YES	DPSD routed to MPH
MPH	12	MISP loop number 12 is the MISP with MPH application where D-channel packet data are being sent

11 Configure a SILC linked to superloop 24, located in IPE Module 0, in IPE card slot 0 as follows:

Table 22
Configure the SILC

Prompt	Response	Comment
REQ	NEW	Add an SILC
TYPE	CARD	ISDN BRI line card
TN	24 0 0	Card location
		Because there is a BRSC configured in the IPE Module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc is displayed:
		MISP 8 BRSC 24 0 7
CTYP	SILC	Card type
REQ	...	...

12 Configure a SILC linked to superloop 28, located in IPE Module 0, in IPE card slot 0 as follows:

Table 23
Configure the second SILC

Prompt	Response	Comment
REQ	NEW	Add an SILC
TYPE	CARD	ISDN BRI line card
TN	28 0 0	Card location
		Because there is a BRSC configured in the IPE Module, the MISP prompt is skipped and the MISP lll and the BRSC lll s cc is displayed:
		MISP 8 BRSC 24 0 7
CTYP	SILC	Card type
REQ	...	

13 Configure DSL parameters as follows to support the terminals in Figure 2:

Table 24
Configure the DSL

Prompt	Response	Comment
REQ	NEW	Add a DSL
TYPE	DSL	To administer the digital subscriber loop
DSL	24 0 0 1	
CTYP	SILC	Card type
OPT	(BRIL)	ISDN BRI line application
MISP	8	DSL is associated with MISP loop number 8
MODE	NTAS	NT Mode Adaptive Sampling
BICT	VCE DTA	B-channel 1 call type has circuit switched voice and circuit switched data
B2CT	IPD	B-channel 2 call type has packet data using an MPH
MPH	12	MPH loop number
LDN	NO	Not associated with listed directory number
XLST	0	Pretranslation group
MTEI	6	Maximum number of TEIs (static and dynamic combined) allowed
LTEI	<cr>	LTID and static TEI pair for D-channel packet data
MCAL	8	Maximum number of calls allowed per DSL
MTSP	8	Maximum number of TSP allowed
PGPN	1	Protocol group number
PRID	6	Protocol ID for ISDN BRI Conference

14 Configure a second set of DSL parameters as follows to support the terminals in Figure 2:

Table 25
Configure the DSL

Prompt	Response	Comment
REQ	NEW	Add a DSL
TYPE	DSL	To administer the digital subscriber loop
DSL	28 0 0 1	
CTYP	SILC	Card type
OPT	BRIL	ISDN BRI line application
MISP	8	DSL is associated with MISP loop number 8
MODE	NTAS	NT Mode Adaptive Sampling
BICT	VCE DTA	B-channel 1 call type has circuit switched voice and circuit switched data
B2CT	VCE DTA	B-channel 2 call type has packet data using an MPH
MPH	12	MPH loop number
LDN	NO	Not associated with listed directory number
XLST	0	Pretranslation group
MTEI	6	Maximum number of TEIs (static and dynamic combined) allowed
LTEI	<cr>	LTID and static TEI pair for D-channel packet data
MCAL	8	Maximum number of calls allowed per DSL
MTSP	8	Maximum number of TSP allowed
PGPN	1	Protocol group number
PRID	6	Protocol ID for ISDN BRI Conference

15 Configure the TSP for USID 11 for the D-channel as follows:

Table 26
Configure the TSP for USID 11

Prompt	Response	Comment
REQ	NEW	New data
TYPE	TSP	To administer the Terminal Service Profiles
DSL	28 0 0 1	DSL location
USID	11	D-channel terminal
CUST	1	Customer number
MPHC	YES	Yes, the TSP is used with an MPH
TRMT	D	D-channel type
TEI	15	Static TEI for addressing terminal
X25P	3	X.25 protocol set group number used on the MPH user interface
NTN	98770	Network Terminal Number of the TSP is 98770
- PVC	1 1	The lowest Permanent Virtual Circuit Logical Channel Number is 1
- IC	<cr>	There is no range set for Incoming Logical Channel Number
- TC	30 60	The lowest Two-way Logical Channel Number is 30. The highest Two-way Logical Channel Number is 60.
- OC	<cr>	There is no range set for Outgoing Logical Channel Number
CDR	NO	No Call Detail Recording for packet data calls

16 Configure the TSP for USID 13 for the B-channel.

Table 27
Configure the TSP for USID 13

Prompt	Response	Comment
REQ	NEW	New data
TYPE	TSP	To administer the Terminal Service Profiles
DSL	24 0 0 1	DSL location
USID	13	B-channel terminal
CUST	1	Customer number
MPHC	YES	Yes, the TSP is used with an MPH
- TRMT	B	Terminal type is set for B-channel configuration
- BCH	2	TSP is associated with the B2 channel of the DSL
LAPB	2	The LAPB protocol set group number to be used on the MPH network interface is 2.
NTN	98765	Network Terminal Number of the TSP is 98765
- PVC	1 1	The lowest Permanent Virtual Circuit Logical Channel Number is 1
- IC	<cr>	There is no range set for Incoming Logical Channel Number
- TC	30 60	The lowest Two-way Logical Channel Number is 30. The highest Two-way Logical Channel Number is 60.
- OC	<cr>	There is no range set for Outgoing Logical Channel Number

17 Configure the PVC connection as follows:

Table 28
Configure the PVCs

Prompt	Response	Comment
REQ	NEW	Add a Permanent Virtual Circuit (PVC)
TYPE	PVC	To administer the PVC connection
MPH	12	MPH loop number
PVCN	1	PVC connection number
XPVC	NO	No external PVC connection
NTN1	98765	First Network Terminal Number of PVC internal connection
- LCN1	1	PVC Logical l Number associated with Network Terminal Number 1
NTN2	98770	Second Network Terminal Number of PVC internal connection
- LCN2	1	PVC Logical Channel Number associated with Network Terminal Number

18 Enable the MISP on network loop number in the Network and IPE Diagnostic Program, LD 32, using **ENLL 8**.

19 Enable the terminals connected to DSL 24 0 0 1 and DSL 28 0 0 1 in the Network and IPE Diagnostic Program, LD 32, using **ENLU 24 0 0 1** and **ENLU 28 0 0 1**.

Follow the instructions in the User manual for the specific terminal and enter the appropriate service profile IDs (SPIDs) for the voice and data circuits of the integrated voice and data terminals.

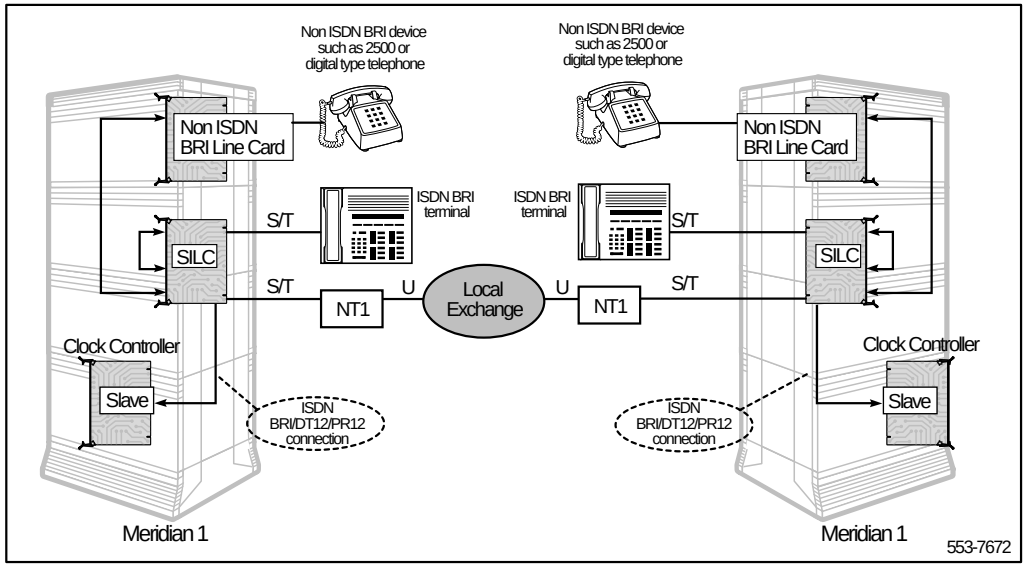
End of Procedure

Example three: Configure an ISDN BRI Tie trunk

In the configuration, depicted in Figure 3, a Meridian Customer Defined Networking (MCDN) Tie trunk connection may be implemented by connecting two Meridian 1s to the ISDN BRI leased line through the Local Exchange via two SILC cards. The S/T interface is connected to the Local Exchange using the NT1 supplied by the PTT. There is no distance limitation on this configuration. System clock synchronization may be achieved by having the Meridian 1 slave to the Local Exchange; the clock source may be derived from the ISDN BRI Local Exchange connection.

Note: The configuration in the example is being done on the user side.

Figure 3
ISDN BRI Tie trunk configuration



Configuration procedures

To configure the ISDN BRI Tie trunk configuration depicted in Figure 3, follow these procedures:

1 Define an ISDN BRI trunk access customer using the Customer Data Block **(LD 15)**.

Table 29
Define a customer for a trunk

Prompt	Response	Comment
REQ:	NEW	Define a new customer.
TYPE	NET	Networking data.
CUST	0	Customer number 0.
...	...	...
ISDN	YES	The customer is equipped with ISDN.
...	...	...

2 Configure the LAPD protocol to use the ANSI standard of transmission with specific LAPD transmission characteristics as follows:

LD 27- Configure the LAPD protocol

Prompt	Response	Comment
REQ	NEW	To add an ISDN BRI component
TYPE	LAPD	To administer the LAPD protocol group.
PGPN	1 <cr>	Protocol group number.
LAPD	YES	To define LAPD parameters which follow.
- T200	4	Maximum retransmission timer is 2 seconds (in units of 0.5 second)
- T203	60	Maximum time between frames is 30 seconds (in units of 0.5 second)
- N200	6	Maximum number of retransmissions
- N201	200	Maximum number of information octets

Prompt	Response	Comment
- K	10	Maximum number of outstanding NAKs Displays number of DSLs defined.
N2X4	0-(10)-20	For 1TR6 connectivity — number of status inquiries when the remote station is in peer busy state. <cr> has been entered.
PGPN	<cr>	
REQ		

3 Configure the route data block parameters for the ISDN BRI Tie trunk**.**

LD 16 - Configure ISDN BRI trunk route parameters (Part 1 of 2)

Prompt	Response	Comment
REQ	NEW	Add ISDN BRI protocol group settings
TYPE	RDB	Route data block.
CUST	0	Customer number 0 (as configured in step 1, using LD 15).
DMOD	<cr>	Default model number for this route. <cr> has been entered.
ROUT	99	Route number 99 has been used.
TKTP	TIE	Trunk route type.
RCLS	<cr>	Class marked route.
DTRK	YES	Digital Trunk Route.
BRIP	NO	ISDN BRI packet handler route (NO is entered, since packet data is not required).
DGTP	BRI	Digital trunk type.
- NASA	(NO)	No Network Attendant Service Interface is required.
- MBGA	(NO)	No Multi Business Group interface on the D Channel is required.
- IFC	(SL1)	DCH interface type.
- - CNTY	<cr>	Country pertaining to EuroISDN interface type.

LD 16 - Configure ISDN BRI trunk route parameters (Part 2 of 2)

Prompt	Response	Comment
…		
- CDR	(NO)	No CDR on the trunk route is required.
- OTL	(NO)	No CDR on outgoing toll calls is required.
...		
- OAN	(NO)	No CDR on answered outgoing toll calls is required.
- MR	(NO)	Advice of Charge for EuroISDN, AXE-Australia or Japan D70.
		The route does not support AOC.
- - RUCS	0	Route unit cost.
- - RURC	0	Route unit reference cost.
- - RUCF	0 - (1) - 9999 (0) - 3	Route unit conversion factor.
		This prompt does not appear for Denmark or Sweden.
...	...	...
- SIDE	USR	Meridian SL-1 node type (either network or user), prompted only if IFC = SL1.
...	...	...
- PGPN	1	Protocol Group (as defined previously in step 2. using LD 27).
- RCAP	BRI <cr>	Remote D-channel capabilities.
		BRI allows ISDN line/trunk interworking).
		This prompt is repeated until <cr> is entered.
...	...	...
- INAC	(NO)	Do not insert NARS/BARS access code on incoming calls.
- DSEL	(vod)	Data selection.
		(VOD) = voice and data.
...	...	...
- OVLR	(NO)	Do not allow Overlap Receiving.
- OVLS	(NO)	Do not allow Overlap Sending.
...	....	....

4 Configure the MISP on loop 18.

LD 27 - Add a MISP for the trunk

Prompt	Response	Comment
REQ	NEW	Add or a MISP
TYPE	MISP	MISP
LOOP	18	MISP lop number.
APPL	BRIT <cr>	Application type for the MISP. BRIT = ISDN BRI trunking. APPL is prompted until <cr> is entered.
DSPD	(NO)	(NO) = No D-channel Packet Switched Data.
...	...	

5 Enable the MISP using the **ENLL l** command in LD 32.

6 Configure the DSL on superloop 24, shelf module 1, card slot 4, connected to SILC port 0.

LD 27 - Add a DSL for the trunk (Part 1 of 2)

Prompt	Response	Comment
REQ	NEW	Add a DSL
TYPE	DSL	DSL
DSL	24 1 4 0	DSL location superloop 24 shelf 1 card slot 4 DSL location 0 (connected to SILC port 0)
APPL	BRIT	Application type for the DSL. BRIT = ISDN BRI trunking.
CUST	0	Customer number
CTYP	SILC	Connected to a SILC line card.
MISP	18	MISP loop number (as configured in step 4, using LD 27).
MODE	TE	The mode for the trunk DSL. TE is entered for Terminal Equipment.
MTFM	(NO)	Enter NO to disable the multi-frame option.

LD 27 - Add a DSL for the trunk (Part 2 of 2)

Prompt	Response	Comment
TKTP	TIE	Trunk type of Tie.
CLOK	(NO)	This trunk DSL is not provisioned for clock source.
PDCA	(1)	Use the default pad table number to be associated with this DSL.
ROUT	99	Route number for the trunk DSL.
B1	YES	Configure B Channel 1.
		If REQ = NEW, a response to this prompt is not required, because B1 parameters are mandatory. The system will automatically display the prompts that follow.
- MEMB	1	Route member number to be associated with B-channel 1.
- TGAR	(0)	Trunk Group Access Restriction.
- NCOS	(0)	Network Class of Service Group Number
- CLS	<cr>	Class of Service options.
		The following options are selected as defaults:
		APN = ACD Priority not allowed UNR = Unrestricted (default).
B2	(NO)	Configure B Channel 2.
		All parameters entered for B1 will be applied to B2, except the route member number will be an unused value. The following message will be displayed.
		B2 will use Route # 99 Member # 2
REQ	...	

7 You may use the **STAT l s c dsl#** command in LD 32 to query the status of the DSL.

End of Procedure

Set up ISDN BRI traffic reports

Contents

The following are the topics in this section:

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Reference list

The following are the references in this section:

- *Traffic measurement formats and output* (553-2001-450)
- *Input/output guide* (553-3001-400)

Introduction

The Meridian 1 generates and stores traffic statistics for ISDN BRI. These statistics can be displayed on the administration terminal or printed on the administration printer. To set up and print traffic reports use LD 02.

Refer to *X11 Administration* (553-3001-311) LD 02 for complete details concerning Traffic reporting prompts. Refer to *Traffic measurement formats and output* (553-2001-450) for complete discussions of traffic and the reports generated.

The following ISDN BRI traffic reports can be generated.

- Network traffic report (001) shows ISDN BRI and non ISDN BRI traffic on the network loops;
- MISP and/or BRSC traffic report (011) shows ISDN BRI DSL traffic on the MISP/BRSC loops and BRSC cards;
- MISP and/or BRSC D-channel management messages report (012) shows the management messages handled by each D-channel on the MISP loops and BRSC cards;
- MISP and/or BRSC messages report (013) shows all the messages handled by the MISP loops and BRSC cards;
- Trunk DSL traffic system traffic report (014) shows system traffic on ISDN BRI trunks.
- MPH traffic report (015) shows the ISDN BRI data traffic over MCU, PRI, B-channel, DSL and BRSC links.

Select the report types

Generate system traffic reports by using the following command:

SOPS (options)--(OPTIONS)

The input and output parameters for these commands follow.

OPTIONS refers to the reports to be generated. This must be one or more of the following numbers.

001 Network traffic report

011 ISDN BRI MISP and/or BRSC traffic report

012 ISDN BRI MISP D-channel management messages report

013 ISDN BRI MISP messages report

014 ISDN BRI trunk DSL system traffic report

015 ISDN BRI MPH traffic report

The following commands can also be used to find out or clear the current report options that have been selected.

TOPS (options) Displays or prints the current report options selected for the system

COPS (options) -- **(OPTIONS)** Clears the report options selected for the system

Scheduled reporting

The reports selected using the SOPS command can be printed or displayed at a specified time, according to a schedule. The data is erased after it is displayed or printed.

To set up a schedule for the whole system, use the following command.

SSHS (sd) (sm) (ed) (em)--(SD) (SM) (ED) (EM)
(sh) (eh) (so)--(SH) (EH) (SO)
(d)--(D)

The input and output parameters for these commands follow.

sd Start day of the reporting period. This must be a 1-digit or 2-digit number from 1 to 31 signifying the 1st to the 31st day of the month.

sm Start month of the reporting period. This must be a 1-digit or 2-digit number from 1 to 12 signifying the 1st to the 12th month of the year.

ed End day of the reporting period. This must be a 1-digit or 2-digit number from 1 to 31 signifying the 1st to the 31st day of the month.

em End month of the reporting period. This must be a 1-digit or 2-digit number from 1 to 12 signifying the 1st to the 12th month of the year.

sh Start hour of the schedule. This must be a 1-digit or 2-digit number from 1 to 24 signifying the 1st to the 24th hour of the day.

eh End hour of the schedule. This must be a 1-digit or 2-digit number from 1 to 24 signifying the 1st to the 24th hour of the day.

so Frequency of the schedule. This must be one of the numbers shown in the following table.

Option numbers for frequency of schedule

Number	Meaning
0	No traffic displayed or printed
1	Hourly on the hour
2	Hourly on the half-hour
3	Half-hourly, on the hour and the half-hour

d Day of the week. This must be one or more of the numbers shown in the following table.

Option numbers for days of the week (Part 1 of 2)

Number	Meaning
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday

Option numbers for days of the week (Part 2 of 2)

7	Saturday

For example, to have the specified reports displayed or printed for the period starting on January 1, 1993 and ending on December 31, 1993 every Monday through Friday every hour on the hour, instead of for the period starting January 1, 1993 and ending on March 31, 1993, Saturday and Sunday, half-hourly, enter the information shown in bold type in the example below. The program displays the current parameter values of the command (shown in unbolded type in the example below).

SSHS 1 1 31 3**--1 1 31 12**
8 8 3**--1 24 1**
1 7**--2 3 4 5 6**

The following command can also be used to display the current schedule.

TSHS (sd) (sm) (ed) (em)
(sh) (eh) (so)
(d)

Note: MISP/BRSC reports contain data collected in the previous period. For example, if the system traffic reports are scheduled to be printed every hour and on the hour, the data displayed at 3:00 will correspond to those collected from 1:00 to 2:00. This is also true for immediate reports. That is, if the user issues the command at 2:05, the data displayed will correspond to those collected from 1:00 to 2:00.

Immediate reporting

The reports selected with the SOPS command can be printed or displayed immediately. The data is not erased after the information is displayed or printed.

To print or display traffic reports immediately for the whole system, use the **INVS** command.

For example, to print or display the traffic reports specified by the SOPS command for the whole system, enter the information shown below.

INVS x x

where **x x** is the range of reports.

ISDN BRI traffic reports

Network traffic report (TFS001)

The network traffic report (TFS001)shows the traffic activities for the Meridian 1 lines and trunks including ISDN BRI DSLs. It is used to determine system peak traffic requirements and traffic load distribution. This information is used to optimize the available system resources or to add more resources to handle the existing requirements. It contains the following columns of information.

Network traffic report column descriptions

Column	Description
Loop number	Subscriber loop number
Loop type	Subscriber loop type, which can be a terminal, conference, or TDS
Intraloop FTM	Number of call attempts that failed to match the channel call type on the subscriber loop (in CCS)
Intraloop CCS	Traffic load on the subscriber loop
Intraloop peg count	Number of call attempts over the subscriber loop (in CCS)
Total loop FTM	Total number of call attempts that failed to match for all terminals on the subscriber loop (in CCS)
Total loop CCS	Total traffic load over the subscriber loop
Total loop peg count	Total number of calls handled by all the terminals on the subscriber loop

The following is an example of the Network traffic report.

Example of Network traffic report

Format							
System ID	TFS001						
Loop number	Loop type	Intraloop FTM	Intraloop CCS	Intraloop peg count	Total loop FTM	Total loop CCS	Total loop peg count
Example							
200	TFS001						
004	TERM	00000	0000142	00161	00001	0002056	01652 S
008	TERM	00000	0000184	00180	00001	0002500	01725 S
012	TDMS	00000	0000000	00000	00013	0000031	01496
013	CONF	00000	0000000	00000	00000	0000010	00006
014	TERM	00000	0000085	00060	00006	0000544	00287
015	TERM	00003	0000064	00039	00014	0000372	00284

Note 1: Superloops are identified by an “S” at the end of the line. Superloops exist in multiples of four (4, 8, 12, 16, etc.). For example, if superloop 4 exists, loops 5, 6, and 7 do not.

Note 2: Determine the grade of service provided within the listed loop, and determine the total loop traffic by dividing the FTM by the peg count.

MISP/BRSC traffic report (TFS011)

The MISP/BRSC traffic report shows the call processing activities of all DSLs associated with each MISP in the system. It is used to determine the type of ISDN BRI traffic such as voice, data, or packet data.

If a MISP is serving BRSCs, the MISP/BRSC traffic report contains MISP and BRSC information. In TFS011, MISP information in the four Dchannel parameters shows totals collected for the line cards served directly by the MISP. BRSC information shows Dchannel traffic data collected for line cards at the BRSC in the IPE Module. The information collected for each MISP and BRSC in the system is described below.

MISP/BRSC traffic report column descriptions

Column	Description
Attempted calls (MISP only)	Number of attempted calls, including all successfully completed and unsuccessfully completed calls.
Completed call (MISP only)	Number of successfully completed calls for the reported period.
Call length	Average length of a call of a successfully completed call (in seconds).
MISP/BRSC messages	Number of signaling messages sent by the MISP and/or the BRSC to the terminals, on the D-channel.
Terminal messages	Number of signaling messages sent by the terminals to the MISP and/or the BRSC, on the D-channel.
MISP/BRSC data packets	Number of data packets sent by the MISP and/or the BRSC to the terminals.
Terminal data packets	Number of D-channel data packets sent by the terminals to the MISP and/or the BRSC.

The following is an example of a MISP/BRSC traffic report, where MISP004 serves as a BRSC at 24 0 15.

Example of a MISP/BRSC traffic report

Format						
System ID	TFS011					
MISP and BRSC ID						
Attempted calls	Completed calls	Call length	MISP/BRSC messages	MISP/BRSC terminal messages	MISP/BRSC data packets	MISP/BRSC for terminal data packets
Example						
0111	TFS011					
MISP002						
00020	00006	00019	00080	00040	00000	00006
MISP004						
00030	00001	00030	00125	00600	00180	00012
BRSC 24 0 15			005110	001020	003600	000200

MISP/BRSC D-channel management messages report (TFS012)

The MISP/BRSC D-channel management messages report contains the traffic management activity for each DSL based on the exchange of signaling messages between the MISP and the terminals over the D-channels. It is used to see if there are any communication problems between the MISP/BRSC and the terminals.

If a MISP is serving BRSCs, the MISP D-channel management messages report contains MISP and BRSC information. In TFS012, MISP information shows totals collected for the line cards served directly by the MISP. BRSC information shows Dchannel traffic data collected for line cards at the BRSC. The following example shows the information collected for each MISP and BRSC in the system.

MISP/BRSC D-channel management report column descriptions

Column	Description
MISP/BRSC links	Number (quantity) of MISP/BRSC initiated link initializations
Terminal links	Number (quantity)of terminal initiated link initializations
MISP/BRSC messages	Number(quantity) of management messages sent from the MISP and the BRSC to terminals
Terminal messages	Number(quantity) of management messages sent from terminals to the MISP
Incomplete calls	Number of times the links associated with D-channels were not able to complete calls
Link errors	Number(quantity) of management data link errors

The following is an example of the MISP/BRSC D-channel management messages report where MISP004 serves as a BRSC at 24 0 16.

Example of a MISP/BRSC D-channel management messages report

Format					
System ID TFS012					
MISP/BRSC ID					
MISP/BRSC links	Terminal links	MISP/BRSC messages	Terminal messages	Incomplete calls	Link errors
Example					
0111 TFS012					
MISP001					
00010	00015	00010	00016	00011	00002
BRSC 24 0 16					
00000	00008	00016	00009	00017	00001

MISP/BRSC messages report (TFS013)

The MISP/BRSC messages report shows the total number of call processing, maintenance, and management messages sent through each MISP in the system. The totals are grouped according to the size of the message.

If a MISP is serving BRSCs, the MISP MISP/BRSC messages report contains MISP and BRSC information. In TFS013, MISP information shows totals collected for the line cards served directly by the MISP. BRSC information shows D-channel traffic data collected right at the BRSC. The following information is collected for each MISP and BRSC in the system

MISP messages report column descriptions

Column	Description
1-10 bytes	Total number of messages that are from 1 to 10 bytes long
11-20 bytes	Total number of messages that are from 11 to 20 bytes long
Greater than 20	Total number of messages that are over 20 bytes long

The following is an example of the MISP/BRSC messages report, where MISP004 serves as a BRSC at 24 0 17.

Example of MISP/BRSC messages report

Format		
System ID TFS013		
MISP/BRSC ID		
1-10 bytes	11-20 bytes	Greater than 20
Example		
0111 TFS013		
MISP001		
00060	00000	00000
BRSC 24 0 17		
00012	00004	00000

ISDN BRI trunk DSL system traffic report (TFS014)

The ISDN BRI trunk DSL system traffic report (TFS014), dedicated to ISDN BRI trunk DSLs, provides traffic measurement similar to the one provided by the ISDN PRI system traffic report; please refer to *Traffic measurement formats and output* (553-2001-450).

The report contains the following information for each MISP in the system.

ISDN BRI trunk DSL system traffic report

System ID TFS014	
MISP ID	
Total number of outgoing maintenance messages	Total number of incoming maintenance messages
Total number of outgoing administration messages	Total number of incoming administration messages
Total number of outgoing protocol messages	
Total number of Layer 3 protocol errors	
Total number of Layer 2 protocol errors	
Total number of Layer 1 errors	
Total number of connected calls	

Meridian 1 Packet Handler traffic report (TFS015)

The Meridian 1 Packet Handler traffic report provides specific information about incoming and outgoing calls and data packets. This report is particularly useful for analyzing the flow of data over network links.

The MPH traffic report contains the following columns:

MPH traffic report column descriptions (Part 1 of 2)

Column	Description
aa	MPH loop number.
bb	MPH link interface type, up to four characters (MCU, PRI, BCH, BRIL, or BRSC). Note: To determine which link interface type is listed in bb, perform a **STIF** command in LD 32; this command displays the interface type and the associated timeslot.
cc	The timeslot number of the MPH link interface type, up to five digits.
dd	The number of times the link was initialized, up to five digits.
ee	The number of incoming calls that were attempted, up to five digits.
ff	The number of incoming calls that were completed, up to five digits.

MPH traffic report column descriptions (Part 2 of 2)

gg	The number of outgoing calls that were attempted, up to five digits.
hh	The number of outgoing calls that were completed, up to five digits.
ii	The average length, in seconds, of data calls, up to five digits.
jj	The number of incoming data packets, up to 10 digits.
kk	The number of outgoing data packets, up to 10 digits.

The following is an example of a Meridian 1 Packet Handler traffic report.

Note: The example shown is for an MCU interface type; the format would be exactly the same for the other interface types (PRI, BRIL, BCH, or BRSC), with "bb" indicating the interface type.

Example of a Meridian 1 Packet Handler traffic report

Format

System ID TFS015

MPH aa

bb cc dd ee ff gg hh ii

jj kk

Example

0111 TFS015

MPH002

MCU 0006 0019 00040 00040 00006 00001 00360

0000000780 0000000568

Call Detail Recording for the Meridian 1 Packet Handler

CDR for the MPH has internal and external record types. When either or both originating and TSPs have CDR, the system generates an internal record type G. Internal CDR may be configured on the TSP whether or not the customer has CDR enabled CDR data does not print if the customer with the TSP does not have CDR.

A call that connects to the public data network, including calls between two different MPH applications on the same switch, generates an external record type H. External CDR configuration is based on customer block data. Incoming and/or outgoing packet data calls may generate external CDR records. The PVC and B-channel calls have no CDR because there is no call establishing process involved.

The MPH traffic report has ten columns as described below:

CDR for MPH report column descriptions

Column	Description
aa	MPH record type, G for internal or H for external; one character.
bb	The record number field, identifying the current record in the CDR sequence. It is the CDR record number for the customer, and it increments for all CDR record types; three characters, right justified.
cc	The customer number field, identifying the customer associated with the call; two characters.
dd	The originating ID is the originating DNA number for internal or external outgoing calls. For external incoming calls, this value is the TN of the incoming link (MCU = ll ss cc uu, PRI = ll cc; filled to 14 characters, left justified.
ee	The terminating ID is the originating DNA number for internal or external outgoing calls. For external outgoing calls, this value is the TN of the outgoing link (MCU = ll ss cc uu, PRI = ll cc; filled to 14 characters, left justified.
ff	Date in Month/Day format; five characters.
gg	Time in Hour:Minute format; five characters.
hh	Call duration, shown in format Hour:Minute:Second; eight characters.
ii	The number of incoming data packets, up to 10 digits.
jj	The number of outgoing data packets, up to 10 digits.

The following is an example of a CDR for MPH report.

Example of CDR for MPH report

Format							
aa	bb	cc	dd	ee	ff	gg	hh
ii		jj					
Example							
G	123	11	ll cc	ll cc	02/26	08:59	00:20:06
0000000780		0000000568					

Meridian 1 and Succession Communication Server for Enterprise 1000

ISDN Basic Rate Interface

Administration

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